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ABSTRACT

This report discusses the need for a national information policy. This need has been generated by advances in computer and communications technology, by shifts in the United States economy from a manufacturing to an information base, and by citizen demands for clarification of their rights to have and control information. Fifteen major policy issues are examined in five clusters: (1) collection, transfer and dissemination of government information; (2) information in commerce as a resource for public good and private gain; (3) the interaction between technology and government; (4) international implications of information policies and developments; and (5) preparing for the information age. How to structure a policymaking process with a unified approach is a critical problem in forming a comprehensive national information policy. This report recommends that the first step toward structuring such a process should be the establishment of a policy oriented organization within the Executive Office of the President, together with the creation of appropriate intergovernmental committees and non-Federal advisory bodies. A bibliography of 187 entries is included. (Author/SC)

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NATIONAL INFORMATION POLICY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Report to the

President of the United States

Submitted by the

Staff of the

Domestic Council Committee on the Right of Privacy

Honorable Nelson A. Rockefeller, Chairman

Published

by the

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The views and opinions expressed in this report are those of the staff of the Domestic Council Committee on the Right of Privacy and do not necessarily reflect official position or policy of the National Commission on Libraries and Information Science.

THE VICE PRESIDENT
WASHINGTON

July 19, 1976

Dear Dr. Burkhardt:

As Chairman of the Domestic Council Committee on the Right of Privacy, I am writing to express my appreciation for the assistance which has been furnished the Committee by the National Commission on Libraries and Information Science.

I am particularly grateful for the conference held by NCLIS on July 8th and 9th, and the contribution it made to the Committee's study of national information policy. The Commission's assistance in connection with this event, and the competence of the Commission's staff in carrying it out, is especially appreciated.

With warm regard,

Sincerely,

Dr. Frederick H. Burkhardt
Chairman
National Commission on Libraries
and Information Science
Washington, D.C. 20036

DOMESTIC COUNCIL COMMITTEE ON THE RIGHT OF PRIVACY

WASHINGTON, D.C. 20504

September 1, 1976

The President
The White House
Washington, D.C.

Dear Mr. President:

I have the honor to transmit to you a report entitled National Information Policy prepared by the staff of the Domestic Council Committee on the Right of Privacy in accordance with your directive of March 8, 1976.

Respectfully,

Nelson A. Rockefeller
Chairman

DOMESTIC COUNCIL

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Director, Office of Management and Budget

Director, Office of Telecommunications Policy

Special Assistant to the President
for Consumer Affairs

Administrator, General Services Administration

EXECUTIVE SUMMARY

Recommendations

1) That the United States set as a goal the development of a coordinated National Information Policy.

2) That there be established in the Executive Office of the President an Office of Information Policy by either structuring a new institutional entity or by refocussing and expanding responsibilities within any of several existing entities.

3) That an inter-agency Council on Information Policy be created, consisting of high-level agency representatives, chaired by the Director of the Office of Information Policy.

4) That an Advisory Committee be created to assist the Office of Information Policy in the performance of its duties, and that this committee be representative of the private sector, local government, and the academic and professional disciplines concerned with the information policy issues discussed in this report.

Rationale

A great number of public policy questions are being generated by advances in computer and communications technology, by shifts in the United States economy from a manufacturing to an information base, and by citizen demands for clarification of their rights to have and control information.

These questions are discussed in some detail in Chapter II, which surveys the major issues arising out of the convergence in recent years of a number of elements of information policy. One element consists of privacy, freedom of information and "sunshine" concerns and their effect on government and private sector use of information. Another relates to pressures on the communications infra-structure. A third is the result of the phenomenal spread of computers. A fourth element consists of attempts to improve the utilization of scientific and technical information and the application of that experience to broader fields.

The answers to the questions which are being raised will make up the national information policy, whether they are arrived at consciously or unconsciously,

by commission or ommission, carefully or haphazardly, in a comprehensive or in a piecemeal fashion. The issue thus is whether or not government will attempt to take a considered unified approach in arriving at these answers. A key question is how to structure the policymaking process so that the country can begin to develop a national information policy that is comprehensive, sufficiently sensitive to new technology, and responsive to the implications of the Information Age.

This report recommends that the first step toward structuring that process is the establishment of a policy-oriented organization within the Executive Office of the President, together with the creation of appropriate intergovernmental committees and non-Federal advisory bodies.

Bringing together the threads of a national information policy in one policymaking location meets several needs:

1) Information policy issues are interrelated so that actions taken in one area can have an effect in others. Decisions directed at one specific problem can have consequences for other problems, even though such decisions may have been initially prompted by discrete considerations.

An Office of Information Policy would provide a mechanism for responding to this reality.

2) Comprehensive attention to information policy issues provides the most efficient use of manpower and skills. By treating these problems in concert, an Office of Information Policy could develop strong and sustained policy skills, take maximum advantage of related experiences, minimize duplication, and enhance the processes of coordination and policy development.

3) An Office of Information Policy, with major responsibility for advising the President in these areas, could prevent information concerns from being compromised and traded away in the face of other concerns at the agency level (below the range of public visibility).

The approach represented by the establishment of thic Office is a prudent and responsible beginning to the process of consolidating the policy machinery of the Federal government with respect to these issues, and providing the means by which leadership can be exercised to anticipate and prepare for public policy questions.

FOREWORD

This report discusses the need for a national information policy, describes the salient issues, and advances recommendations by which such a policy can be systematically formulated within the Executive Branch.

The term "information policy" has a variety of connotations. All of them, however, have one thing in common - they deal with the policies which govern the way information affects our society. To the Federal Communications Commission information policy may mean policy dealing with the regulation of information messages over common carrier facilities; to the Justice Department it may mean policy with respect to the implementation of the Freedom of Information Act; to the National Science Foundation it may mean policy concerning the communication of research results to the scientific and technical community in the public and private sector; to the library community it may mean policy with respect to postal rates for the distribution of books throughout the country; and to the businessman it may mean policy

affecting the information reporting requirements imposed by Federal and state governments.

Although the term "information policy" can have different connotations, the various perspectives which are brought to it are all part of a common family of interdependent and intersecting interests. It is this larger context and the expectation that information policy issues will become more pressing in the future which compel a national information policy. The interrelationships which exist between and among information communications, information technology, information economics, information privacy, information systems, information confidentiality, information science, information networks, and information management have signalled the need for a broader, more comprehensive approach to the problem.

Genesis of the Report

The President in a March 1976 memorandum to the Vice President, who serves as Chairman of the Domestic Council Committee on the Right of Privacy, directed the Committee to:

- o review and clearly define the information policy issues which confront Federal policymakers,
- o ascertain the status of information policy studies now going forward within a number of agencies in the Executive Branch, and
- o report to him by September 1, 1976, with recommendations on how the Federal Government should organize itself to deal with these information policy issues.

In response to this charge, a broad review of policy issues concerned with the creation, collection, dissemination, availability, access, and utilization of information in the United States was undertaken.

This process actually began much earlier on September 7-9, 1975, in Washington, D.C., when a Roundtable on Privacy and Information Policy was convened by the Vice President to examine information issues and discuss the need for a national information policy. The participants included a select group of experts from government, business and industry, and academic communities. They discussed a wide-ranging set of current and future information problems.

Another formal gathering was held on July 8-9, 1976, under the auspices of the National Commission on

Libraries and Information Science. At this Conference on National Information Policy Issues, 40 representatives from various parts of the public and private sectors came together to categorize and analyze the critical information issues.

In addition, numerous discussions were held with knowledgeable persons in government and the private sector. The great interest and widespread, if not universal cooperation of these individuals and others has been crucial to the process.

The contributions of a number of people to the preparation of this report should be acknowledged. First is the staff of the Domestic Council Committee on the Right of Privacy, which has worked diligently towards its completion, in addition to fulfilling its regular duties in connection with its original charge regarding personal privacy initiatives. Thanks are due to William Hermelin, the Committee's Deputy Executive Director; and the other members of the Staff, Robert R. Belair, Timothy D. Mead, Dawn MacPhee, George Trubow, David P. Milanowski, Mary Maurey, Janet Wartell,

Linda Kates, and Elizabeth Tarr. Support and cooperation from a number of people were also important. These include Peter Wallison, General Counsel to the Vice President; Richard Parsons and F. Lynn May, Associate Directors on the staff of the Domestic Council; and Thomas Houser, recently appointed Director of the Office of Telecommunications Policy. Finally, the role played by three persons deserves special mention: Andrew Aines, Joseph Becker, and Russell Pipe, whose expertise in the issues under consideration was invaluable.

The scope of this report is admittedly ambitious, particularly in light of the short time available for its completion. Nevertheless, efforts to limit its scope solely on the ground that it would make it more manageable have been resisted. We believe that an inclusive and comprehensive approach is necessary to the development of information policy. It is an approach which is essential if government is to have the ability to meet public needs in the modern age.

QUINCY RODGERS
Executive Director

September 1, 1976

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CHAPTER I

STATEMENT OF THE PROBLEM

"Q. If we survive the technological crises, what should we then expect?

A. We shall enter a post-industrial society...." 1/

Herman Kahn, 1976

***

Continuing advances in computer and communications technology are raising new questions of public policy. The increasingly important role which such technologies play in the economic and commercial life of the United States lends a certain urgency to the answers to these questions.

Some of the more frequently asked of these questions include:

- What to do about our national postal network which is already retrenching in the face of spiraling costs and which faces the further loss of business to new information networks, such as electronic funds transfer systems?

- How to reconcile citizen demands for open government with the practical problems of administering freedom of information and Sunshine laws?

- How to preserve a sense of individuality and privacy against a massive government which demands more and more information from individuals and businesses, and which argues that its restricted use promotes efficiency?

- What to do about foreseeable dislocations brought on by the shift from an industrial to an information economy and the obsolescence in training and employment skills which could ensue?

Answers to these and the many other questions discussed in this report will, when taken together, constitute the national information policy of the United States. All such answers will not be arrived at simultaneously. Answers will not come from one source, nor will they come by government fiat. They will involve many participants in the Executive Branch, in Congress, in the independent agencies, in study commissions, in the state legislatures, in the courts and in the private sector. Answers will come through confrontation and through accomodation. They will come as part of the continuing process by which policy is shaped.

The Report is both a part of that process and a blueprint for improving the contribution which the Executive Branch can make to it.

The balance of Chapter I discusses some of the forces which are raising public policy questions and looks at the manner in which Congress and the Executive Branch have responsed to these forces. Chapter II provid.: a review of the major issues of information policy, and in so doing provides an agenda which the policy units proposed in Chapter III can use to begin the process of analysis.

The Impact of Technology

The advent of computer and communications technology is causing a quiet revolution to occur in the field of information. It is quiet because the signs of change are subtle and not always visible. It is a revolution because the rate of change is very rapid. Our country now possesses new information technology that can retrieve and dis-

tribute information faster, with greater facility to more people than ever before in history. But information technology has brought problems as well as opportunities. Inadequate protection of the privacy of individuals, ineffective handling and retrieval of information, incompatibility of computerized information systems, and uncertain relationships between public and private sector groups involved in information activities, have all raised difficulties.

The consequences of this newly emerging information environment are poorly understood analytically, but they are destined to have an enormous impact on the Nation's economic growth, our social development, and our individual lives. How information is handled in this country determines, to a large extent, the quality of the decisions which our people make. Government must, therefore, be alert to the dynamics of change that are taking place. And, it should accept responsibility for facilitating the introduction of information technology and systems into our society in ways which conform to our democratic principles and respect our national ideals.

Some of the key characteristics of the new information environment created by information technology are as follows:

- o An exponential increase in the volume of information flow. Critical observers expect a fourfold to sevenfold increase by the year 1985.

- o A shrinkage of time and distance constraints upon communications. Satellite communications provide long distance capability to use computers and other information technology throughout the world.

- o Greater nationwide dependence upon information and communication services. There are already nearly one million computer terminals in the United States which provide interactive, on-line information services to people across country.

- o An increase in the interdependence of previously autonomous institutions and services. For example, the National Commission on Libraries and Information Science has observed a definite trend in the linking of libraries and information centers into networks designed to share resources across traditional jurisdictional lines. 2/

- o Conceptual changes in economic, social, and political processes induced by increased information and communications. The projected impact of a "checkless/cashless" society as a result of electronic funds transfer is a prime example.

- o A decrease in the "time cushion" between social and technical changes and their impact and consequences. The introduction of devices

such as the pocket calculator and citizen band radio have had immediate effects on the social environment in the United States. There is no longer time to anticipate the impact of information technology applications before they become part of our everyday lives.

- o Global shrinkage and its consequent pressures on increased international information exchange. The Swedish government has passed legislation regulating personal information about Swedish citizens and various national interests have begun to anticipate more such laws.

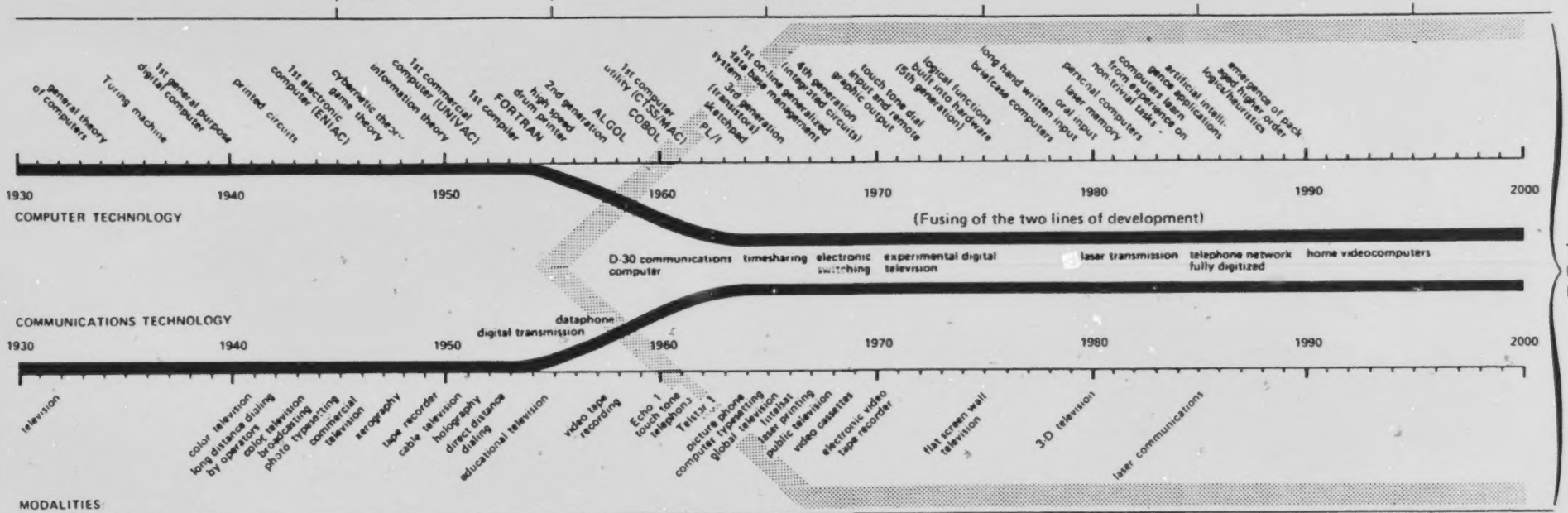
During the last fifty years, communication by telephone passed from occasional into general use. Likewise, radio and television have become integral parts of our daily lives. Computer communication networks are now commonplace in business, scientific work, and government. Satellites circling the earth bring voice and pictures from other continents into homes and offices. Lasers and fiber optics are on the threshold of general use.

While the spectacular growth of computer technology and communications technology in the last thirty years has been notable, what is even more significant is the rapid way these technologies are merging. Figure I, from an important report prepared by the Conference Board, graphically illustrates this trend. 3/ Computer

TIME LINE OF DEVELOPMENTS IN INFORMATION AND COMMUNICATION TECHNOLOGY

Figure I
Simplified Chart of Developments, Uses, and Impacts of Information Technology

COMPUTER COSTS	In 1945 it cost about $1,000 to do a million operations on a keyboard and took at least a month	In 1952 it cost about $300 to do a million operations and took ten minutes	In 1960 it cost $.75 to do a million operations and took a second	Computers can do a million operations for less than 6 cents in about 1/2 a second	Computers can do a million operations for 1/10 a cent in 1/10 a second	Between 1983 and 1997 computer cost to decrease by a factor of 100
COMPUTER SPEED		In 1954 computers have a speed of 2000 operations per second	From 1955-1965 internal speeds have increased by a factor of 200 Computer speed is up to 150,000 operations per second	From 1965-1975 internal speeds have increased by a factor of 200 Computer speeds are up to 4,000,000 operations per second		
COMPUTER SIZE		Computers have capacity of 40,000 characters	From 1955-1965 the physical size of the central processing unit decreased by a factor of 10 Computer capacity is up to 200,000 characters	By 1975 fully integrated circuits begin to reduce the size by a factor of about 100 Computer capacity is up to 15,000,000 characters		



MODALITIES

ONE/ONE MODE OF COMMUNICATION	Modes of communication such as word of-mouth, drums, smoke, relay runners and hand printed manuscripts were the major means of communication till the invention of the printing press.	Telephone and telegraph now provide individuals with access to a system which accomodates personalized, almost instantaneous communication over distance with ease of access, wide availability and individual control over content.	Telephone networks and equipment become increasingly complex, dial telephone, direct distance dialing, picturephone. Dataphone, tele-xerox facsimile services extend this into other modalities.	Computer applications and communications satellites provide highly sophisticated nationally and internationally linked one-to-one communication networks possibilities.	Developing are audio/video tape cassette systems enabling highly personalized and potentially one-to-one communication with wider access, availability and personal control over content.
ONE/MANY MODE OF COMMUNICATION	The introduction of the movable type printing press enhanced the possibilities of communication in a one-to-many print mode.	Mechanical improvments in techniques of printing resulted in proliferation of printed materials. e.g. books, newspapers, periodicals. Aural one-to-many communication was limited by range of unaided voice until the invention of the radio	Radio and television provide high capacity information systems to the home and give a variety of choices of news, entertainment and other information. Range of choices of programs but little direct control over content.	Print technology further augmented by the introduction of computer and laser technologies. e.g. computer typesetting and laser printing. Copying machines extend print technology into highly selective, personalized mode.	
MANY/MANY MODE OF COMMUNICATION			Sophistication of one-to-many and one-to-one modes convert these to potential many-to-many modes. News gathering through wire services and disseminating through newspapers, radio or television are examples.	Also note the recent growth of 'underground' services- news services and papers, journals, cinema, audio and video cassettes.	
MANY/ONE MODE OF COMMUNICATION			Increased efficiency and sophistication of media will make possible an expansion of existing modes into many-to-one situations. Community antenna television, video cassettes and electronic video tape recorders are emerging systems potentially capable of many new services.	Examples are more individually oriented information and educational services, specialized news services, remote marketing catalogue services, etc.	Potential but currently experimental and very limited, are systems which may be used for polling, plebiscites and other interactive response situations.

and communication technology are not only merging but are also converging with related technologies such as printing and photography. When all of these elements are fully integrated, the resultant capability for information transfer and exchange could create a form of national information interdependence. Indeed, some believe the merger of computers and communications with other technologies will result in the development of a totally new information infra-structure for society. The possibility of networking local and regional information systems throughout the country or even ultimately throughout the world could greatly expand the citizen's access to the information needed to function effectively in tomorrow's technological and mobile society.

The Information Age

Collectively, these developments are seen by some of the most farsighted of our social commentators as ushering in a new period of human activity. In Daniel Bell's terminology, we are entering the "Post-Industrial Society." 4/

This evolutionary stage of societal change is characterized by a shift in the composition of the vectors responsible for economic growth. The "Post Industrial Society" is one in which economic growth is based on the expansion of a service economy built upon a sophisticated, information-based, capital-intensive production system rather than on technological innovation alone.

In the same vein, Peter Drucker describes the growth of a "knowledge economy":

> The 'knowledge industries' which produce and distribute ideas and information rather than goods and services, accounted in 1955 for one-quarter of the United States gross national product. This was already three times the proportion of the national product that the country had spent on the 'knowledge sector' in 1900. Yet, by 1965, ten years later, the knowledge sector was taking one-third of a much bigger national product. In the late 1970's, it will account for one-half of the total national product. Every dollar earned and spent in the American economy will be earned by producing and distributing ideas and information, and will be spent on procuring ideas and information.
>
> From an economy of goods, which America was as recently as World War II, we have changed into a knowledge economy. 5/

While economists struggle to improve their understanding of these developments and to refine their definitions and tools of analysis, it is nevertheless already clear that from one third to one half of the gross national product of the United States is currently attributable to the production and distribution of information and knowledge. Economists say that this trend signals a departure from a traditional economy of goods and that the United States is now entering the "Information Age." The economy will soon be one in which the production and application of knowledge will be the determining factor in competition. Just as the steam engine ushered in the Industrial Revolution and brought a host of public policy questions in its wake, the new information technology is ushering in the Information Age and its unique policy questions.

The Role Of Government In Shaping Information Policy

For more than three decades, observers in the United States have suggested the need for sharper governmental focus on information policy problems.

Threaded through their reports are recommendations for the establishment of government policies that would contribute to orderly growth of information technology in the public and private sectors, to improve management of information resources, and so forth.

Figure II illustrates numerous studies, Congressional documents, laws, other significant documentation, and technological advances which have appeared concerning various aspects of information. 6/ As can be seen, four major policy vectors - computers, communications, freedom of information and privacy, and science information - are rapidly converging. And, the milestones described in Figure II grow more numerous and more interrelated with the passage of time. What is happening is that streams of policy development which have previously existed independently of each other have begun to come together. Individuals within such streams, often having diverse backgrounds and training, have begun to interact. And yet, sharp governmental focus has so far been elusive. Dr. Anthony Oettinger of the Harvard Program on Information Technology and Public policy made the same point

Milestones in the Evolution of Informatio

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Freedom of Information and Privacy												
Telecommunications	• Communications Act of 1934 ... Estab. FCC; empowered to regulate interstate and foreign communication by wire and radio in the public interest.							• Commercial television began in U.S. with the granting of first FCC license.				
Data Processing	• University of Texas Library introduced a circulation system using punched cards.									• First operational program controlled computer in the U.S.		• U.S. Commerce Department established the Office of Technical Services.
Scientific and Technical Information												
Broad Policy												

formation Policy Issues

1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1
							• Telecommunications; A Program for Progress. The President's Communications Policy Board. • Direct distance-dialing inaugurated.				
ra- d r in	• U.S. Commerce Department established the Office of Technical Services.	• First all-purpose all-electronic digital computer invented.				• The first automatically sequenced high-speed electronic digital computer introduced in the U.S.	• First UNIVAC system delivered to the U.S. Census Bureau. • First Joint Computer Conference held in Philadelphia.	• First electronic reservations system at LaGuardia Airport, N.Y. installed.		• UNIVAC 1 became commercially available. Optical scanners are introduced and perfected.	• First "puter" Ordnan Calcula deliver Naval V Labora
				• Microwave radio relay system commercially operated between Boston and New York. —Wiener's Cybernetics is published. —Royal Society of London convened Scientific Information Conference.		• Passage of the National Science Foundation Act. • "Berkner Report" advised U.S. State Department on science, foreign relations, and the national flow of sci/tech information.	• Armed Services Technical information Agency is established.				
											• Congre sioned right C initiate a revise right la

	1957	1958	1959	1960	1961	1962	1963
		• Administrative Procedures Act, Amendment on withholding information by the Federal Government					
c with i-		• President Eisenhower broadcast first voice transmission via satellite.		• NASA launched its first experimental communications satellite, Echo I, to herald the arrival of the age of intercontinental communications through space.		• The Communications Satellite Act of 1962. • Communications Satellite Corp. (COMSAT) authorized to own and operate commercial communications satellites. • First live television programs are relayed between America and Europe via Telstar I satellite.	
		• Second generation computers using solid state circuitry, stored programs, and user-oriented programming languages begun.		• On-line Airline information system for reservations begun. • National Data Center proposed.			
ces	• Creation of the President's Science Advisory Committee and the position of the White House Science Advisor. • Office of Science Information Service established in U.S. National Science Foundation.	• International Conference on Scientific Information held in Washington. • Improving the Availability of Scientific and Technical Information in the United States, Panel Report of the President's Science Advisory Committee. • National Defense Education Act, created Science Information Council and Office of Science Information Service in NSF.	• Federal Council for Science and Technology established.			• Office of Science and Technology created in Executive Office of the President. • Library of Congress organized National Referral Center for Science and Technology. • Scientific and Technical Communications in the Government Task Force Report to the President's Special Assistant for Science and Technology.	• U.S. Committee on Scientific and Technical Information (COSATI) is formed. • Science, Government, and Information: the Responsibilities of the Technical Community and the Government in the Transfer of Information, Report of the President's Science Advisory Committee.
						• Federal Plans for Improvement in the Design, Management and Use of Scientific Engineering and Other Information Systems, Senate hearings. • The Production and Distribution of Knowledge, Fritz Machlup.	• First statement of uniform Government patent policy set forth in Presidential Memorandum.

Milestones in the Evolution of Information Policy Issues (co

1964	1965	1966	1967	1968
	• Griswold vs. Connecticut, Supreme Court Decision set in motion a new legal definition of the concept of privacy. • Use of psychological tests as a requirement for Federal employment, Senate hearings. • National Data Center recommended by Social Science Research Council. • Psychological testing procedures and the rights of federal employees, Senate hearings. • Invasions of Privacy (Government Agencies), Senate hearings	• Freedom of Information Act, enacted. • Invasions of privacy, Senate hearings. • The computer and invasion of privacy, House hearings. • Report of the Task Force on Storage of and Access to Government Statistics U.S. Bureau of the Budget. • Invasions of privacy by government agencies, Senate hearings.	• Privacy and Freedom, Alan Westin. The first comprehensive study of social and legal basis of privacy. • Privacy and the Rights of Federal Employees, Senate Report. • Government Dossier, Senate Report on Computer Privacy, Senate hearings. • Limiting categories of questions in decennial censuses, House hearings.	• "Privacy and the Nati Bank Concept" House • "Computerization of Files: What Impact o ual?". UCLA Law Re
	• Report of the Committee of the National Citizens' Commission of International Cooperation. White House Conference on International Cooperation. • First commercial communications satellite, Early Bird, is placed in orbit.	• "Electromagnetic Spectrum Utilization - The Silent Crisis," A report by U.S. Department of Commerce.	• Public Broadcasting Act of 1967. • Global Communications System - Recommendations Relative to World Communications, President Johnson's Message to Congress.	• Carterfone Decision - decision opened term devices for connectio telephone system. • "Final Report," of th Task Force on Comm Policy, (Rostow Rep
• Federal Property and Administrative Services Act of 1949 amended (Brooks Act) directed General Services Administration to coordinate and provide for the economic and efficient procurement of computers for the Government.	• Third-generation computers, using integrated circuits, miniaturization, system logic improvements, and higher speeds, came into being.		• Pierce Panel Report to the President's Science Advisory Committee.	
	• Recommendations for National Document Handling Systems in Science and Technology made report by COSATI.			
	• Scientific and Technical Information Policy Group established at OECD. • Federal Council on Science and Technology established Committee on Government Patent Policy.	• Report of the President's Commission on the Patent System issued.		

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in a different way. He argues that there is currently no lack of information policy in the United States but that policy which is already in place is neither comprehensive nor coordinated. 7/ Review of actions taken by Congress and Executive Branch agencies shed some light on how this has happened.

Legislative Branch Responses

The Congress has been frequently asked to resolve questions of information policy in recent years, although there is little indication that it has seen these questions in any related form.

Within the past few years, for example, the strong public outcry against potential threats to individual privacy from increased use of computerized data banks and from misuse of information maintained in Federal files prompted the passage of the Privacy Act of 1974. Pressures for more open government have also led to consideration of laws by the Congress such as the Freedom of Information Act 8/ enacted

in 1966 and the Sunshine proposal 9/ recently passed by both Houses of Congress. Congress has acted on or has under serious consideration consumer legislation, legislation on telecommunications and telephone company structure, legislation creating a Presidential Science Advisor, and so forth. But with the exception of a bill pending before the 94th Congress which would require that all reports accompanying proposed legislation include an information impact statement, there is little evidence that Congress has seen the need to consider the overall information policy aspects of its legislation. 10/ That bill, moreover, is given little chance of passage at this time.

Thus information policies emerging from the Congress continues to be developed in an ad hoc piecemeal fashion by numerous Congressional committees struggling to frame responses without the benefit of a comprehensive overview of the field. And information issues have apparently been mounting beyond the Congressional capacity to respond. One

result of this has been the proliferation of study commissions designed to look at some of the ticklish and distinct aspects of information policy issues. These Commissions include:

- National Commission for Review of Federal and State Laws on Wiretapping and Electronic Surveillance, P.L. 90-351, June 19, 1968
- National Commission on Libraries and Information Science, P.L. 91-345, July 20, 1970
- Electronic Funds Transfer Commission, P.L. 93-495, October 28, 1974
- National Study Commission on Records and Documents of Federal Officials, P.L. 93-526, December 19, 1974
- National Historical Publications and Records Commission, P.L. 93-536, December 22, 1974
- Commission on Federal Paperwork, P.L. 93-556, December, 27, 1974
- Privacy Protection Study Commission, P.L. 93-579, December 31, 1974
- National Commission on New Technological Uses of Copyrighted Works, P.L. 93-579, December 31, 1974

Such Commissions are evidence of both growing interest and policy fragmentation. In some cases their jurisdictions overlap. There is a risk that they will themselves spawn new policies which may

be in conflict. They also represent a Congressional attempt to delegate or postpone the resolution of difficult information policy issues. Such delegation is also reflected in issues left for judicial determination such as the balancing of open access and privacy considerations.

Executive Branch Responses

The same ad hoc, piecemeal approach which has characterized Congressional responses can also be found in the Executive Branch. Moreover, while institutional mechanisms which could have helped coordinate parts of the problem have occasionally existed, they have always been so beleaguered by constant proposals for their abolition, by inadequate resources and by limited authority that such a role has been impossible. Examples of such mechanisms are the Office of Telecommunications Policy, the Domestic Council Committee on the Right of Privacy, and the former Office of Presidential Science Advisor which once was the only locus in the Executive Office of the President concerned with information policy.

The present piecemeal approach to information policy has a historical antecedent in a similar and related area: the transportation infra-structure of the United States, which is a collection of ad hoc arrangements, many representing the overlay of new technology upon existing systems. The fact that they are interrelated has frequently been ignored, and as a result, transportation development in the United States has often been in disarray. A similar pattern could recur where the infra-structure is communications and the traffic is information, knowledge and ideas rather than people and goods.

One should be careful not to overstate these shortcomings in the information area. In the Executive Branch as in the Congress, the rapidity with which the issues of the Information Age have arrived has been the single biggest problem in framing coordinated and appropriate responses. In both Branches, the focus has been on the immediate pressures generated by technology and by citizen demands. Moreover, developing a conceptual overview which will permit a government-wide perspective and improved coordination is difficult, at best, when

issues are familiar; it is next to impossible to do in the abstract. But the past few years have provided considerable experience. That "critical mass" of issues, which clarifies the interrelationship of the problems may have been reached.

The signs that this is happening are numerous. The gradual awakening to this complex of issues is apparent in increased attention to the problems of coordination both on an inter-agency and an intra-agency basis.

As might be expected, the issues of current concern to the agencies reflect information problems attendant to their missions. These would include: difficulties encountered in implementation of the Privacy Act of 1974, the Freedom of Information Act (as amended), the Federal Advisory Committee Act, and the Federal Reports Act of 1942; the convergence of computers and communications technologies; burdens of reporting; need to ensure diversity of outlets of expression while preventing monopoly; content regulation in broadcasting; efficient use of data as a resource; ownership of information-handling services; export of

information; and government subsidies. The agencies express concern about public trust in government, information-gathering, replacement of technologically outmoded information systems, standards and safeguards for Federal information managers, cost and responsibilities for information retention, effective flow of information between the Federal, state and local governments, improvement of data definitions and standards to improve the rapid and economical exchange of information, training of information personnel, clarification of policies regarding justification for data collection and exchange, impact of communication on the information sector, and better understanding of the information sector in socioeconomic terms.

Some Federal agencies report that they are undertaking a number of information policy studies internally and through contractors. Some of the subjects being studied include: impact on business if the Privacy Act is extended to the private sector; privacy and confidentiality as factors in research survey response; the information economy; the effect of growth in the information sector; issues and stakeholders

in electronic transfer of information; and the need for a national research service to help crime laboratories identify evidence. Mention should also be made of several studies being undertaken by the Office of Telecommunications Policy (which were commissioned in the aftermath of the Presidential directive for this report); a study dealing with information policy for science and technology being conducted by the Division of Science Information at the National Science Foundation; studies by the National Commission on Libraries and Information Science in the library and information service areas; and, studies by other National Commissions in information-related areas.

Two agencies, the Department of Commerce and the Department of Justice, it should also be noted, have not only recognized the critical role of information, but they have also created high level bodies responsible for agency information policy. And the recently confirmed Director of the Office of Telecommunications Policy has announced that he is considering establishing an information policy capability within that office.

In summary, the Federal agencies have responded to information policy issues in reaction to specific stimuli, such as the Freedom of Information Act and the Privacy Act regulations. But as a general rule, they have not considered in any systematic way the impacts they are having on government-wide policy development or even the information needs of their own agencies.

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The driving force of technological innovation, the convergence of previously diverse streams of policy development, and the attempts by government to respond to public demands for reform are elements that have given rise to the public policy issues of the Information Age. These issues are the subject of Chapter II of this Report.

CHAPTER II

MAJOR INFORMATION POLICY ISSUES

> "The major public policy issues revolving around information technology have just begun to be raised. The next quarter century will see an emphasis on what is done, applications that directly affect a large part of the population, consumer as well as capital goods, and the raising of major public policy questions..." 1/
>
> John Diebold, 1976

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This Chapter contains a survey of the major information policy issues which face government. It is also an agenda for government attention to national information policy. The choices made in the selection and organization of issues necessarily involve value judgments about priorities in this area. The further refinement of this agenda and the continual review of these priorities is the mission of the proposed organizational entities recommended in Chapter III.

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The issues in this Chapter are discussed separately and numbered sequentially. They are grouped in issue clusters that provide another perspective in demonstrating how they are interrelated. The issues are also stated as imperatives, although the discussion of each issue frequently takes the form of questions.

The clusters are:

I. Government Information: Collection, Transfer and Dissemination

II. Information in Commerce: A Resource For Public Good and Private Gain

III. The Interaction Between Technology and Government

IV. International Implications of Information Policies and Developments

V. Preparing for the Information Age

Following the discussion of these issues, a summary of this Chapter provides a focus for recapping some of the major events requiring attention in each cluster.

ISSUE CLUSTER I

GOVERNMENT INFORMATION-COLLECTION, TRANSFER AND DISSEMINATION ISSUES

Information policy questions with regard to government-held information fall into three broad issue areas: (1) Federal collection of information from non-Federal sources; (2) Federal maintenance of information including inter-agency and intra-agency transfers, information system management and information disposal policies; (3) access to and dissemination of Federally held information to parties outside the Executive Branch.

Today Executive Branch information processing is estimated to cost 20 billion dollars per year. Agencies annually print ten billion sheets of paper. The yearly flow of paper among executive agencies is estimated to fill 4 1/4 million cubic feet of space. 1/ Agency reports submitted in compliance with Privacy Act requirements indicate that the Executive Branch maintains 6,723 record systems which contain more than 3.8 billion records about individuals. 2/ A considerable amount of information held by the Executive Branch is now in automated systems. At last count the Federal Government has about 9,260 computers of which 6,000 were

acquired in the last ten years. Expenditures for the automation of agency information systems reached approximately 3.2 billion dollars in 1975. 3/

The issues outlined in this cluster are increasingly the subject of attention in the Executive Branch, the Congress, the courts, and the media. They involve complex interactions between the Freedom of Information Act, the Privacy Act, the Federal Records Act, and other legislation. They will soon require weighing the recommendations of at least two major study commissions. They touch on some of the most important management elements of the agencies and of the Office of Management and Budget.

When these issues are examined together, the likelihood that they will receive further Congressional attention becomes apparent. Not only are they imbedded in a host of prior Congressional actions, but they involve fundamental and competing choices which are properly the subject of ultimate solutions through the legislative process where both Congress and the Executive can participate. In addition, these issues demonstrate the need for continual adjustment of policies in information management, and that legislative theory

needs testing through experience.

Given these considerations, it is reasonable to assume that Congress will readdress itself to some or all of these issues within the next three to five years. An attempt at a comprehensive legislative scheme for government-held information which would address collection, transfer, and dissemination is conceivable. In the meantime, the Executive Branch should be preparing for a cooperative approach to this process.

ISSUE 1 Formulate Information Collection Policies To Balance Governmental Needs Against Economic, Political And Social Costs

Background

Collection of information is vital to the functioning of government. The Executive Branch's power to collect information derives principally from the President's authority to, "take care that the laws be faithfully executed." 4/ As the nature and character of governmental activity has expanded, the classical governmental functions (police, public health, tax collecting) have been joined by a host of other programs including public assistance, grants and loans, licenses and permits, and others. The Government makes a legitimate and powerful claim for the collection of information for the purpose of determining whether its programs are working and standards being met.

Discussion

There are presently 10,000 to 12,000 Federal statutes that authorize Executive Branch collection of information. 5/

Most of these statutes contain standards that control the type of information to be collected, the source of information, and the permissible collection methods.

The Federal Records Act

The Federal Records Act provides three standards for collection of information by Federal agencies: (1) it shall constitute as minimal a burden on businesses and individuals supplying it as possible; (2) it shall be at a minimum cost to government; and (3) unnecessary duplication in collecting information shall be avoided. 6/

The Federal Records Act charges the Office of Management and Budget (OMB) with reviewing information collection practices of Federal agencies, determining Federal needs and coordinating information collection. 7/ To meet this responsibility the Act directs OMB to establish a report clearance process. 8/ Any agency form, questionnaire or information collection device (including verbal survey instruments) that asks for identical information from more than ten non-Federal sources must be submitted to OMB for review and clearance.

Amendments to the Act give the General Accounting Office (GAO) clearance authority for information collection activities of independent regulatory agencies. 9/

The Office of Management and Budget's reports clearance office receives approximately 3,000 requests per year, and devotes about seven and one-half professional man years to collection requests. 10/ It is estimated that they reject less than five percent of collection requests.

Critics, particularly in the Congress, charge that the OMB (and the General Accounting Office) clearance process is ineffective and understaffed.

Agencies sometimes collect informaton without submitting the program to OMB. Public sources are relied upon to discover violations. This year, for example, OMB learned that the Department of Health, Education and Welfare's Office of Civil Rights had sent a questionnaire to 3,000 school districts without clearance. The questionnaire required information on disciplinary procedures and practices.

OMB required the Office of Civil Rights to notify recipients of the questionnaire that the questionnaire program had been halted and that no replies were expected until further notice. 11/

A problem connected with the present information collection review mechanism is its limited coverage. The Office of Management and Budget has testified that only about one-third of the Federal Government's information collection activities are covered by its reports clearance process. 12/ The Internal Revenue Service is exempt from the clearance provisions of the Act and most sources agree that the IRS accounts for roughly one-third of all Federal data collection. The Federal Reserve Board and the Federal Energy Administration are also excluded. Independent regulatory agencies account for another one-third of the Federal information collection effort. The General Accounting Office concludes that its collection review efforts make only a limited contribution to the formulation of an intelligent Federal information policy. 13/ Review by the Comptroller General is strictly limited to a determination of burdensomeness and duplication. 14/

The present information collection clearance process prevents the Executive Branch from evaluating agency information needs effectively. No effort is made to audit an agency's use of information; and therefore, there is no way to determine if agencies accurately describe their information needs.

Standards for Federal Collection of Personal Data

The government's collection of personal data is one of the more sensitive and regulated areas of information policy. The Privacy Act places several restrictions on Federal collection of personal information.

Limitations include the following:

- Federal agencies should collect only information about an individual that is relevant and necessary; 15/
- Agencies should not collect information concerning the exercise of First Amendment rights; 16/
- Information should be collected from the subject of the information where possible; 17/
- Individuals must be advised of the use contemplated for information, the authority for its collection, and possible consequences of refusal to provide it. 18/

In the past few years, several efforts were made to limit the quantity of information collected from individuals and businesses. In 1970, the President ordered the Office of Management and Budget and the General Services Administration to lead a reduction in Federal reporting requirements. In March, 1976, President Ford ordered a ten percent reduction in Federal information collection and another five percent cut in July, 1976.

In 1974, a Commission on Federal Paperwork was created to "study and investigate statutes, policies, rules, regulation, procedures, and practices of the Federal Government relating to information collection processing, and dissemination, and, the management and control of these information activities." 19/ The Commission's report, due in October of 1977, is expected to include extensive recommendations for reform of Federal information collection activities.

The Executive Branch lacks a set of overarching information collection principles which can guide agency practices. These principles, particularly if developed and monitored from a centralized source, would bring consistency and coordination to Executive

Branch collection practices.

Examples of pressing information collection issues that currently confront the Executive Branch are:

- On what basis should some agencies be exempted from the information collection restraints of the Federal Records Act?
- Should efforts to reduce information collection be aimed at certain types of information or certain information gathering activities? or both?
- How is information collection related to its use and dissemination?
- Is cost a relevant factor in influencing collection practices?
- Can the Federal Government develop principles for determining when the public need for information outweighs the reporting burden on the public?
- Can fraud in government benefit and social service programs be policed without leading to increased information collection?
- How should the Executive Branch develop, review and evaluate agency information needs?
- Does openness in government and closer review by Congress and the media lead to more or less information collection?

ISSUE 2 Establish Principles For The Intra-governmental Transfer Of Information Which Promote Efficiency And Provide Adequate Safeguards

Background

The sharing of information within government has attracted considerable Legislative and Executive Branch attention. For some people, it is the key to more efficient programs, lower costs, effective policing of fraud, and the means by which the private sector can escape a massive and growing burden of reporting requirements. For others it raises the spectre of unlimited exchange of information, particularly personal information, invasion of privacy, and for some indivduals, an inability to escape their past or achieve rehabilitation. The social security number, the FEDNET, data banks, and even the computer have become symbols of these concerns.

Discussion

Despite Congressional urging, the existence of clear transfer standards, and occasional Office of

Management and Budget intervention, some Federal agencies share their data with sister agencies only minimally. This condition may persist even when agency heads have made it clear that they desire a proper interchange of information and data.

The Office of Management and Budget has publicly complained that Federal agencies too often put confidential labels on information in order to limit its transferability. 20/ Section 3508 of Title 44 of the United States Code contributes to the non-circulation of confidential data. Not only does it provide that confidential data need not be transferred, but furthermore, it establishes that in the event such data is shared with another agency, the receiving agency is forbidden from making any further transfers. 21/

Critics point out that lack of data-sharing results from agency (and Congressional) failure to incorporate transfer strategies in their information programs. For example, the U.S. Global Atmospheric

Research Program collects climatology data from satellites, balloons, aircraft, and oceanographic vessels. At present the program has assembled 10^{14} bits of data, an amount roughly comparable to a substantial part of the collections of the Library of Congress. However, the program does not have computing resources, technical staff or operating funds necessary to make this information available in usable form to other agencies in the Executive Branch (or, of course, to the public). 22/

The benefits of such sharing have long been understood in the scientific and technical information areas. The large government investment of taxpayers' dollars in research and development, and the importance of the flow of scientific and technical information provides a rich and necessary nutrient for industry, commerce, agriculture, education, and other fields.

Even so, progress toward optimal use of scientific and technical information has been interrupted. At one time, this subject was addressed under the auspices of the Committee on Scientific and Technical Information (COSATI), related to the Presidential Science Advisor.

When that Committee was dissolved, an important forum for dealing with these issues was lost. Recent legislation reestablishing the Science Advisor and his staff in the Executive Office of the President seeks to rectify this situation. 23/

The issue is much broader than scientific and technical information. It involves the quality of management, coordination, planning, and operations for all of the proliferating information and communications programs of the Federal government - an extraordinary estate with computers, communications conduits, data banks, micro-graphics readers, radios, photocopiers, word processors, libraries, information centers, clearinghouses, computer centers, and other forms of equipment and systems.

These questions are raised: How efficiently and effectively are the Federal agencies applying new and old information technology to keep information-processing costs down to a minimum? How effectively is the information machine processing the information and data that passes through it? How well is the machinery used to move the information within, between, and to and from the Federal agencies? Have

the agencies used the extraordinary speed and power of the information machine to improve missions and public services? What steps are the Federal agencies taking to determine costs, performance, and benefits derived from better information processes? Are the agencies using processes of management that apply more to conventional and inkprint-based information systems than the new electronic forms? Being capital-intensive, are the new information systems being planned so that information generators, managers, workers, and users are part of a total system that will operate with a high probability of success to warrant large initial and continuing resource investments?

Within individual agencies, the size and number of information systems and amount of information equipment is significant. But when these systems and resources are viewed in the aggregate, the extent of the government investment is staggering. Yet even within the more narrow and easily defined scientific and technical information area, there is no clear data on what is being spent. Agencies can be expected to resist attempts to standardize government practices and

place additional limitations on their freedom to make decisions which affect their information systems. It will be important to distinguish between resistance which represents legitimate needs connected with agency missions and resistance based on general bureaucratic reluctance to change in-place systems. Improved knowledge about the different information systems will be necessary before the competing choices are clear and decisions can be made.

FEDNET

On the positive side, efforts are made occasionally which do lead to economies and efficiencies of information sharing. The Brooks Act mandates the efficient use of data processing equipment among the Executive agencies, as well as cost effective procurement. 24/ Some have seen such efficiency in networking and sharing of data processing equipment. It is now possible to interconnect previously independent data banks, so that information once collected by a single agency could be made available to many.

The first attempt to centralize government-held computerized information was made in the mid-1960's

with the proposal to establish a National Data Center. A second proposal called FEDNET would have resulted in a computer sharing and interconnected data system, thus allowing any agency the technical means to access the data banks of all others whether or not the information was relevant to the functions of the inquiring agency. Both programs were cancelled because of their failure to include privacy safeguards.

FEDNET and similar proposals for computerized networking have engendered heated opposition each time they are proposed. Of course, a long time source of concern has been the absence of restrictions on transfers between manual systems. But the inefficiency and slowness of manual systems has itself been viewed as a safeguard. By removing inefficiency through the use of advanced data processing linkages, these systems remove the only existing safeguard and increase the need for restrictions on use.

Federal Use of Personal Data

Ironically, numerous charges are made that although the Executive Branch has failed to develop policies

and strategies to effectively use non-sensitive information, Federal exchange of at least some kinds of sensitive information may be overbroad and excessive.

The most commonly cited example concerns the government's use of personally identifiable information. As mentioned, the Federal Government maintains 3.8 billion records containing personal information. Fifty-eight percent of this information is maintained by three agencies: the Department of Defense, the Department of the Treasury, and the Department of Health, Education and Welfare. 25/ Sixty-eight percent is compiled in administrative systems, defined as data banks that deal with internal agency operations such as personnel records, travel records, or parking permit records. Thirteen percent of the government's personnel records are in domestic assistance program systems, defined as data banks that deal with the operation of Federal assistance or benefit programs, for which individuals or organizations must request or apply in order to participate. Eighteen percent of the information is contained in other types of data systems, including law enforcement, intelligence and financial systems. 26/

The Privacy Act set numerous standards for Federal maintenance and inter-agency transfer of personal information. For example, the Act requires that personal records used by agencies to make decisions about individuals be maintained with a degree of accuracy, relevance, timeliness, and completeness. 27/ Under the Act agencies must also develop rules of conduct for personnel handling personal information to assure that the information is maintained in a secure environment.28/

Nevertheless, policy questions still plague Federal managers of personal information systems. For example, there is little understanding of what constitutes a requisite degree of accuracy, relevance, timeliness, or completeness. Furthermore, despite study efforts by the National Bureau of Standards and the Domestic Council Committee on the Right of Privacy, there is little consensus in the Executive Branch concerning the proper standards for system integrity and security in personal data systems. The courts have not yet ruled on any of these questions.

The Privacy Act generally prescribes intra-agency and inter-agency transfer of personal information without subject consent but recognized a number of significant exceptions. First, agency employees with a "need to know

in the performance of their duties" can access the information. 29/ Information that would be public under the Freedom of Information Act can be transferred within the agency and the Executive Branch without limitation. 30/ Transfers pursuant to a proper "routine use," (defined as a use of such record for a purpose which is compatible with the purpose for which the information was first collected) are authorized under the Privacy Act. 31/ Finally, the Act permits transfers of information to the Census, to the Archives and for a criminal or civil law enforcement activity. 32/ The Act provides that as to any of these transfers except those that are intra-agency or mandated by the Freedom of Information Act, the transferring agency must make an accounting of the date, nature and purpose of the transfer and the identity of the receiving party. 33/

Preliminary evidence suggests that the Privacy Act's transfer provisions have not provided agencies with usable standards on the basis of which they can make discerning and consistant judgments about personal information transfers. One problem concerns the

intra-agency, "need to know," disclosure standard. Executive Branch agencies are in reality a conglomerate of many different kinds of organizations. The Department of Health, Education and Welfare (HEW), for example, has eleven component agencies, 130,000 employees and controls one-third of the Federal budget. Offices as diverse and sensitive as the Social Security Administration, the Office of Education, the Indian Health Service, the National Institute of Mental Health, and the Parent Locator Service can exchange personal information at their own discretion and without compliance with the transfer standards that would obtain if these offices were housed in different agencies. In view of the Department of Health, Education and Welfare's massive potential for data exchange, the Office of Management and Budget has asked the agency to voluntarily adopt transfer limitation standards. 34/

A second major deficiency lies in the Act's routine use concept. By simply publishing notices in the Federal Register 30 days prior to initiation of a transfer, agencies are free to share sensitive personal data throughout the Executive Branch. The routine use test - that the receiving agency must use

the information for a purpose compatible with the purpose for which the data was originally collected 35/ - is probably too vague and subjective to constitute an effective transfer limitation. Although no one has as yet completed an empirical review of agency routine use notices, the feeling among many knowledgeable observers is that the Privacy Act has not significantly altered Federal agency personal information transfer practices.

Social Security Number

Concern over the creation of a universal identifier stems, in part, from the fear that this would expedite the process by which information is shared in both the public and private sector. Despite its shortcomings when applied to such a purpose, the social security number has often been seen as one such identifier.

A moratorium on further spread of the Social Security Number was included in the Privacy Act of 1974. 36/ Nevertheless, the problem continues to be a source of concern to many Americans. Many of these issues were presented recently when the Senate considered the Tax Reform Act. An amendment to that Act would have permitted the Parent Locator Service at the

Department of Health, Education and Welfare, established to combat welfare fraud and force absent parents to fulfill their support obligations, to have access to its Social Security system. The Senate, with many members troubled by the difficulty of reconciling the competing values at stake, opted for a compromise course and allowed the Parent Locator Service (though no other system at this time) such access.

Law enforcement has generally stated a claim of access to information in Federal files. The Attorney General has advised agencies that access for law enforcement purposes should be listed as a routine use in the system notices required under the Privacy Act.37/ Other attempts to write ground rules for sharing of information among law enforcement agencies have focussed on procedural safeguards, such as limiting the number of people who can make requests and providing an audit trail to permit oversight.

Listing Of Information Use Issues

This quick overview of policies and practices concerning maintainance, transfer and disposal of

information held by the Executive Branch suggests that a great deal of policy development remains to be done in this area. Many of these questions are the subject of the inquiry now being conducted by the Federal Paperwork Commission. Although numerous policies exist that speak to specific parts of the puzzle, others have not been given attention and nowhere have we developed a unifying body of principles to guide Federal information use. A catalogue of pressing policy issues helps to illustrate the nature of the problem.

- Should the Executive Branch further standardize agency procedures for the maintenance, transfer and disposal of information?
- Should agency information systems be compatible?
- What standards should be developed for information accuracy, relevance, timeliness, and completeness?
- What principles should govern the relationship between information sensitivity and system security?
- What principles can be developed to improve inter-agency sharing of non-sensitive data?
- What principles can be developed to limit intra-agency and inter-agency sharing of sensitive data?
- When and under what circumstances should information be destroyed?

ISSUE 3 Continue Progress Toward A More Rational Disclosure System

Background

Today, beneath a thin layer of perfunctory affirmation of the principles which underly policies of open disclosure, there exists sharp disagreement over the extent and nature of access to government-held personal information, national security information, law enforcement information, financial trade secrets, and other information describing the internal operations of the government. From the secret deliberations which marked the drafting of the Constitution, through the development of a government decisionmaking framework in the Administrative Procedures Act, through the passage of the Freedom of Information Act in 1966, the role of disclosure and openness in a democracy has been the subject of great debate.

Today freedom of information, the foundation of government disclosure, is by no means settled law. Its policies and its administration remain controversial. But this should not be surprising. It is an ambitious attempt to establish principles covering a variety of diverse circumstances in a discipline, information management, which is in its infancy.

Discussion

Government disclosure policy stands on several pillars. The most important of these is the Freedom of Information Act (FOIA), enacted in 1966 and amended in 1974. Another is the Privacy Act. The FOIA has also been used to amend the older Federal Administrative Procedure Act 38/ with respect to some requirements for public information operations. Another pillar is the Federal Register, itself the subject of discussions as to its effectiveness for information dissemination. Yet another is the Federal Advisory Committee Act. 39/ The newest pillar is Sunshine legislation which, as this report was in preparation, had passed both Houses of Congress after successfully establishing its popularity in numerous state legislatures. Such legislation is designed to open access to the deliberations of governmental bodies. These are the main elements of disclosure, although others exist.

The scope of this report precludes an exhaustive discussion of all of the controversies which attend this

disclosure framework. For instance, the FOIA has nine exemptions delineating types of information which need not be disclosed. 40/ Each of these presents issues of concern to various constituencies. Judicial interpretations are mounting as to the scope of each. And Congress already made one attempt at the redefinition of some in the 1974 amendments. Indeed, to discuss the FOIA exemptions alone could provide a report equal in length to this entire effort.

Instead, this discussion will be limited to a few of the issues which are receiving the most attention, with the understanding that more are undoubtedly lurking just over the horizon.

Straining Agency Resources

The first year of experience with the FOIA as amended suggests that there are at least some questions about its practicality. The short response time which Congress set (10 days for initial decision, 20 days for administrative appeal) is creating controversy. For

example, the FBI claims that 200 people working full time cannot reduce its nine month backlog. However, in contrast, the Department of Defense claims that it is able to process 44,000 FOIA requests during 1975 without building up a backlog. The resources which will be devoted to administration of the Act are directly related to the speed of administration as well as the accuracy with which determinations can be made.

That the problem is exclusively, or even primarily, one of resources, however, is not a universal view. Members of Congress and the judiciary have charged that bureaucratic hostility and lack of adequate attention are the major problems in implementation of the Act.

Decentralized Administration

Another issue that FOIA implementation has raised is the extent of decentralization both within agencies and within the Executive Branch as a whole. For example, the Department of Defense has eleven separate agencies with their own independent review procedure for the FOIA. Treasury has nine autonomous units. Each of

the Department of Health, Education and Welfare's 130,000 employees is authorized to release information under the FOIA. The result has naturally been conflicting practices among and within agencies.

The Department of Justice is the primary Federal agency with responsibility for coordinating Executive Branch disclosure policy. By its own estimate its efforts in this regard are inadequate. 41/

A Department of Justice FOIA Committee, staffed by lawyers from its Office of Legal Counsel and its Civil Division, review Executive agency decisions to deny FOIA requests where the matter has a reasonable possibility of leading to litigation. The Committee's review process is informal but it does serve to bring some consistency to at least those FOIA matters that are likely to go to court. Despite this procedure, many observers claim that the basic problem with the government's FOIA coordination process is that the Department of Justice assumes a number of conflicting roles. First, it is an agency that is substantively affected by the Act. Secondly, as the Government's lawyer, the Justice Department traditionally works to serve its client agencies by doing the best job that

it can of defending agency decisions and actions. Thirdly, the Justice Department, through its Office of Legal Counsel and its FOIA Committee, has responsibility for directing and coordinating agency compliance with the Act. These tasks are by no means complementary and they undermine Justice's ability to contribute to a consistent and national Federal disclosure policy.

Data Havens

Another issue that has emerged from implementation efforts concerns the scope of the Freedom of Information Act. Because the Congress and its offices (such as the General Accounting Office and the Library of Congress), the States, and the private sector including Federal contractors, are not covered by the Act, agencies sometimes attempt to take information that would normally belong in their own files and maintain the material in these "data havens." For instance, Department of Health, Education and Welfare personnel reported to us that they no longer

accept possession of drafts of General Accounting Office audit programs because it cannot shelter the documents from FOIA requests. Instead, HEW personnel inspect the drafts at GAO which is exempt from the FOIA. 42/

The extent of the "data haven" problem is not yet clear, but insofar as the Federal Government must meet a disclosure standard that exceeds the policies in other sectors, pressures exist for Federal agencies to "hide" information in exempt systems.

Personal Information Exemption

The Freedom of Information Act's exemption for information that if disclosed would violate personal privacy is controversial and difficult. 5 U.S.C. (b)(6) exempts "personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy." Therefore, the Freedom of Information Act and now the Privacy Act, determines Federal policy for the disclosure of personal information.

Some observers see problems here. Because the privacy concern is stated as an exemption from FOIA's normal pattern of disclosure, it is narrowly construed by the courts. Particularly when combined with the language of the exemption which bans only "clearly unwarranted" invasions of privacy, this has the potential for permitting overbroad disclosure. In signing the Privacy Act of 1974, President Ford recognized this shortcoming and expressed regret that the Congress had not used the Privacy Act to construct a new and strong definition of privacy.

It is ironic that despite its failure to set an independent standard for privacy, the Privacy Act may nevertheless work to limit disclosures of personal information. Observers note that because most personal information in agency files is organized according to Privacy Act procedures, agencies have a tendency to automatically apply Privacy Act confidentiality standards and disregard the FOIA's broader disclosure requirement. If true, this example of form over substance would have the inadvertent effect of increasing citizens' privacy rights.

In addition to these effects which result from the relationship in which the Congress put FOIA and Privacy, there are a number of key policy issues which are ignored or not given sufficient emphasis under the present scheme. They include:

- The identity of the requesting party (under some circumstances it may make a difference whether the party seeking access is a family member, a business partner, a public interest organization, etc.);
- The requestor's purpose (A commercial purpose may be assigned one priority, an educational purpose another, a political purpose a third, etc.);
- The identity of the subject whose information would be released (It can be relevant that the subject is a public figure, a recipient of a government benefit, the subject of government regulation or penalty, etc.);
- The nature of the information sought (Information, even though personally identifiable, has different levels of sensitivity. A Domestic Council Privacy Project headed by the National Bureau of Standards has developed a methodology for measuring personal information sensitivity that could make Executive Branch information analysis more uniform and articulate.); and,
- Any special circumstances that affect the government's relationship to the information (For example, if the information was obtained on a promise of confidentiality).

FOIA And Business

Two major areas of disclosure are continuing to receive attention. These have to do with trade secret and commercial information and with the role which competition plays in the business/government information environment. In order to bring information within the trade secrets exemption, an agency must be able to show that the data is: (1) commercial or financial; (2) obtained from a person, and; (3) privileged or confidential. 43/ The exemption for a "trade secret and commercial or financial information obtained from a person and privileged or confidential" is principally used by corporations and other business organizations. It also protects individuals from disclosure of their privileged financial information. 44/ The purpose of the exemption is to protect the privacy and competitive position of persons who provide information to assist governmental decisionmaking under assurances of confidentiality. 45/

There is wide consensus that financial information and trade secrets given to the government under promises of confidentiality should be closely guarded by the agency receiving the information. Nevertheless, controversies often arise over access to specific financial data. The courts have held that agencies have no right to even require that requestor's inform them of their true identity. 46/

In a related vein, many agencies report that the great majority of FOIA users are corporations seeking information that will give them competitive advantage or insight into Federal regulatory intentions. The Federal Trade Commission disclosed that in 1975 more than two-thirds of its FOIA requests came from corporations or their law firms. Only 12.5 percent of their requests came from individuals, 9.3 percent from state and local government, 5.3 percent from the press and 4.2 percent from public interest groups. 47/ Alexander M. Schmidt, Food and Drug Administration Commissioner, has stated that about 90 percent of FDA's disclosure requests come from corporations seeking information about their

competitors for what he calls "industrial espionage." 48/

This use pattern raises a question of whether the Act is in fact turning out to be a vehicle for creating a well-informed, vigilant electorate. Some critics charge that the Act is really useful only to the information elite. Surely for those who would contest agency denials of their FOIA requests, litigation is a sophisticated and expensive remedy beyond the reach of most of the public. Observers argue that if the Congress and the Executive have in fact adopted disclosure as a national policy, information held in Federal files will not reach the general public without a far more affirmative and coordinated effort than is required under the FOIA.

Pricing Policy

In practice, agencies annually publish and distribute hundreds of thousands of documents.

Every Executive agency has at least a few and many have hundreds of major publications.

Section 483(a) of Title 31 of the United States Code establishes the basic standards for agency pricing decisions. As regards user charges for government information it directs agencies to establish fees that are fair and equitable, taking into account direct and indirect cost to the government, value to the recipient, public policy or interest served and other pertinent facts. 49/

The Freedom of Information Act however, sets entirely different fee standards for Federal information that is available to the public but not mandated for dissemination. 50/ The general effect of these differing standards is that information which agencies actively disseminate is free or very inexpensive whereas information that agencies do not actively disseminate but which is available if requested tends to be very expensive.

Existing policies fall short, in many respects, of creating a rational and satisfactory Federal information disclosure system. This discussion has identified a number of information disclosure issues that the present policies have not resolved satisfactorily or completely. On what basis should the Executive Branch make determinations concerning the kinds of information it should actively disseminate to the public? What should the fee policy be for information that is actively disseminated? And, for information that is public but not actively disseminated? When and in what form should intra-agency and inter-agency memoranda, policy discussions and other internal exchanges of information be open to the public? Immediately? After a sufficient period of time? Only in oral proceedings but not in written form?

ISSUE CLUSTER II

INFORMATION IN COMMERCE: A RESOURCE FOR PUBLIC GOOD AND PRIVATE GAIN

Information is a national resource. It is the raw material of knowledge and, therefore, an essential part of modern economic, political, and social life. It has a central role in the market place not only in the creation of goods and services, but also as a commodity in its own right.

The importance of information as a resource is increasing with the advent of the Information Age. As it does, questions about the adequacy of the legal and market mechanisms which have governed its production, dissemmination, and use in the past have become more critical.

The issues in this cluster deal with problems which arise out of the major roles which information plays in commerce. This is not to say that commercial considerations are or ought to be paramount in the determination of these issues. Certainly there are other values which must be served by public policy. The commercial aspects, however, serve to heighten the trade-offs involved.

ISSUE 4 Develop Appropriate Legal Doctrines To Respond To New Developments In Information Use

Background

Property concepts have been central to legal theory and social and economic activity in our society. But concepts of property were formulated to deal with tangibles, primarily land and chattels. When information, ways of dealing with information, or information products are treated as property, issues arise which differ from those resulting from the application of property theories to tangible matter.

Property, both in law and economics, is the right and power to exclude others from the various incidents of possession and use. 1/ Some of the characteristics of information make definition and enforcement of property rights difficult.

- Information can be infinitely shared. It can be sold, exchanged, or given away, and yet retained by the transferor.
- Information is transferred via a marker or carrier (e.g. books, magnetic tape, microfilm), but the value of the information is independent of the value of the marker.

- There are no established units for measuring the value or quantity of pure information (information separate from any marker).

As our society becomes increasingly information oriented, the problems inherent in a bare property rights analysis of information issues become more apparent and the need to modernize legal doctrines in response to new developments in information use becomes critical.

Discussion

The limitations of legal doctrines and mechanisms based on property concepts are evident in a variety of information issues. Specific areas illustrative of the inadequacy of property analysis for the resolution of information policy issues are: third party record-keeping, copyright and photocopying, copyright and data banks, and computer software protection.

Third Party Record-Keeping

In this age of extensive record-keeping, the information exchange pattern is frequently triangular; the subject of the record, the holder of the record,

and the party seeking access to the record mark the points of the triangle. In this triangle, information can travel from one point to another without coming into contact with the third point. An individual record subject, therefore, may at times be effectively divorced from control of information about himself held by a record-keeper. At issue are the rights of the individual with respect to that information.

Bank records, which have been the focus of considerable judicial and legislative attention provide a useful example. In the course of providing full banking services to its customers, a bank can receive information about customer income, past and present employment, amount and type of indebtedness, marital and family status, social and business relationships (for credit reference purposes), and other personal data. Even photocopies of checks maintained over a long period of time reveal more than financial information; they evidence the customer's personal and business associations, spending habits, travel, political beliefs, and other personal affairs.

Narrowly defined notions of property can be a pitfall in grappling with the real issues presented here. An individual can assert neither ownership nor possession of the record. However, to dismiss the individual's potential rights on these grounds, is to apply tests that are becoming increasingly inappropriate in an information age. This sidesteps the need to resolve conflicting interests of law enforcement, personal privacy, and commercial practices. Here, as in many other information issues, the bounds imposed by traditional property analysis present a barrier to the development of rational information policy.

Copyright/Photocopying/Databanks

Legal mechanisms for dealing with property rights in information comprise a body of law which is generally described as the law of intellectual property. The classic justification for offering protection to intellectual property is the need to provide incentives for the production and dissemination of information in our society. Today, however, developments in information use and technology have changed the context in which these

mechanisms operate, and reassessment of the effectiveness of these laws in implementation of information goals is crucial. Copyright is one example.

Underlying the copyright and patent systems of the United States is Article 1, Section 8 of the Constitution which provides:

> Congress shall have the Power...to promote the Progress of Science and Useful Arts, by securing for Limited Times to Authors and Inventors the exclusive right to their respective Writings and Discoveries.

This authority is permissive, not directive; copyright is a privilege granted by Congress and not a natural property right.

Photocopying

At its inception, copyright was primarily concerned with the right to make copies. The copyright holder was granted certain rights which resembled property in the sense that the holder was permitted to exclude others from certain uses of his publication (e.g. copying, sale, etc.). The scarcity of printing presses enhanced the enforceability of these rights. Today, however, every

person with access to a photocopier is a potential publisher. As a result, the ability to enforce the copyholder's right to restrict copying and collect revenue has been severely eroded.

The impact of photocopying on the operation of the copyright laws is illustrative of the ways in which technological developments have enhanced the unique characteristics of information and made application of exclusionary property concepts inappropriate. There is a clear need for reassessment of the goals of information laws and a restructuring of these laws in a manner consistent with the characteristics of information and flexible enough to accomodate future developments in information technology.

Copyright embodies two traditions fundamental to our society: a system of private incentives and the encouragement of learning. The photocopying problem is just one example of how these traditions sometimes work at cross purposes and create obstacles to the maximum flow of information.

The fair use doctrine has been aptly characterized as a safety valve on the law's definition of copyright. 2/ Judicially designed to prevent copyright from imposing

unreasonable restrictions on the use of copyrighted works, this elusive doctrine has presented a number of troublesome issues in application, but has been useful in providing a degree of elasticity to the copyright system. Developments in information technology, however, have presented problems and created conflicts of such magnitude that accomodation by the fair use doctrine is not possible without distortion of the balance between the interests of providers and users of intellectual works which the current system attempts to establish.

While the inadequacy of the current copyright system is universally acknowledged, proposals for modernization range from modification which would accomodate new technology to modification of the term of copyright, to elimination of copyright altogether, and to substitution by an alternative mechanism for compensation of authors and publishers. Compulsory licensing, though strenuously resisted is one of the proposals which has frequently been suggested.

Changes in the regulation of any part of the information flow will have an effect throughout the information system. In the copyright area, Congress has

spent twenty years trying to balance competing interests and effect compromises between the parties involved. One major handicap in this revision process, and in the field of intellectual property law in general, has been the paucity of empirical evidence to support conflicting claims. Such evidence must be gathered and carefully analyzed if legal mechanisms for regulating the flow of information are to be effectively restructured.

Data Banks

Present day computer-based information storage and retrieval systems have the ability to process information in ways never dreamed possible by the framers of the Constitutional copyright clause. The legal complexities of copyright and computers are enormous. Potential copyright infringement is involved in computer input, storage, retrieval, and output.

Many issues revolve around the right and methods of compensation. At what point of computer usage does the author's right to compensation arise? Should a copy-

right fee be exacted for computer input on the grounds that it may be retrieved in a different format to which no copyright liability attaches? Should the fee be assessed at output, determined by recorded usage of the material? What about selective input - is this fair use? How would this affect the author's market for his copyright product? How can copyright violations be detected?

Copyright problems, however, extend beyond the question of compensation. The administrative burden or "transaction cost" of obtaining permission for use of copyrighted works poses significant problems as well. The difficulty and expense of locating proper parties and negotiating permissions for input of copyrighted materials from diverse sources could present a substantial handicap to the use of modern information systems.

The moral rights of authors with respect to input must also be considered. Does the author have the right to control input, or only output? What implications arise from the omission of the author's name from output, or the modification of his work in the process of input or internal manipulation?

At present, these and other questions are being raised in the context of information centers located in the government, large libraries, educational institutions, and private industry. In the future, answers to these questions will be primary factors in defining the scope of information available to the individual through home information systems. The capacity of technology to record, store, and retrieve information has already exceeded the ability of current legal mechanisms to govern effectively the relationship between the creator and user of this information. The copyright permission system of compensation presents a potential legal obstacle to the achievement of the goal of assuring maximum possible access to information for society as a whole, while failing in many cases to provide adequate compensation to authors.

Software Protection

Software provides another illustration of the limitations of current legal mechanisms based on property concepts. Two characteristics of software make effective protection from unauthorized use essential

to its producers: the extent of investment required for its development, and the ease and inexpensiveness of software reproduction. There are serious shortcomings in each of the major forms of intellectual property law in providing such protection.

Patent protection offers the strongest form of protection for intellectual property, but the statutory requirements preclude most forms of software from coverage. Further, the delay between filing and issuance of a patent, and the requisite search of the prior art make the current patent system inadequate as an effective form of protection of this rapidly developing information product.

Copyright protection is generally available for computer programs, but there are a number of significant drawbacks. Protection is limited to the form of expression; valuable concepts, techniques, and intellectual processes expressed in the program may be freely copied, regardless of the novelty or innovation involved. Copyright infringements of program copyrights are difficult to detect, and just as difficult to define under current statutory language. What constitutes copying of a computer program?

Does the copyright law proscription against unauthorized translation apply to translation into other computer languages? Should copyright protection of computer software be limited to the right to make and vend copies of the program or should the right extend to the use of a program to operate a computer in a manner similar to the performance right in a musical or dramatic work? 3/

Trade secret protection is a common law alternative to the statutory protection of the copyright and patent systems. The primary advantage of this form of protection is that limited access results in less opportunity for misappropriation; therefore, problems associated with detection of infringement or unauthorized use are reduced.

The inadequacies of the copyright and patent systems as a form of investment protection make trade secret treatment of software a more attractive alternative to statutory protection in many instances. This has serious public policy implications. If one accepts maximum dissemination of useful information as

a goal of information policy, trade secrets are socially the least satisfactory form of protection.

> Secrecy leads to a wasteful expenditure of talent and skill on solving problems already solved and writing programs already written. Markets for ideas and their expression are made gravely imperfect when information is suppressed. 4/

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The information explosion made possible by technological advances is becoming increasingly critical. If public policies are to be responsive to public needs, the information on which these policies are based must be readily accessible in usable form. Information technologies have the capacity to facilitate research and knowledgeable decisionmaking. Technological developments also, however, have seriously impacted on current legal mechanisms governing the relationship between creators and users of knowledge, and threaten to undermine the economic incentive to knowledge production.

Careful attention must be paid to the design of mechanisms which promote both the origination and the accessibility of information in our increasingly information oriented society.

ISSUE 5 Write Rules To Clarify The Relationship Between Government And The Private Sector In The Production, Publication And Dissemination Of Information

Background

Some of the most difficult issues facing the government result from the growth of a new commercial information service sector in the United States. This new industry often finds itself in conflict with government dissemination services. It seeks a resolution of these conflicts and a uniform set of policies that will provide a climate for its growth and investment. The problem is complex, since the dissemination of government-generated information is a legal responsibility

of the Federal agencies, either specifically written into the agency legislation, or implied in agency mission descriptions. Moreover, many of the information programs of Federal agencies have grown over the years and have become national and international in scope, making dismantling difficult. Several of the agencies have taken steps to turn some parts of their dissemination programs over to private sector contractors, but the commercial information industry believes this effort to be insufficient.

Also at issue is the status of government data bases that are being produced in machine-readable (computer magnetic tape) format. Commercial on-line, interactive information retrieval organization are establishing popular retrieval services that provide remote access to users who are equipped with terminals. Legal suits have been made to force agencies to provide data bases; more are expected in the future, especially if the commercial on-line services prove to be profitable. This and other issues argue for a uniform government policy that will minimize contention between the two sectors.

The For-Profit Sector View

1. Private industry's role is to guarantee full and open choices to information users from multiple sources.

2. While publicly supported library functions providing free information should not be abolished, it should be recognized that there is no such thing as free information.

3. The information industry is equipped to re-format information to fit the needs of users more flexibly than the government.

4. "The deadening effect of the generosity of Big Brother (in disseminating information) will impose perhaps not an iron curtain but certainly a wet blanket on creativity, choice, and the competition of ideas this Nation needs to function." 5/

5. There is no clear policy guidance for government agencies in the offering or pricing of products or services to non-government customers.

As a result, a wide variety of tape distribution practices exists within government depending, it appears, on the motivations of the individual agency.

6. Competition between the government and private sector in data base services results in withdrawal of the commercial offering. Government agencies offer data base services that overlap free enterprise offerings. The market for information retrieval services cannot support a large number of overlapping products.

7. OMB Circular A 76, governing policies for acquiring private sector products and services for government use, should be updated and revised to apply to information products and servcies provided to the public.

8. In some instances, private sector copyright of works produced by the Federal government should be permitted to enhance dissemination of useful information and reduce distribution costs.

The Government View

1. The public has paid for the generation of information and should be entitled to get it without paying for it a second time.

2. Federal agencies are adhering to the law in their dissemination and regulatory practices.

3. To the extent possible, agencies are using private industry in lieu of creating their own, government-manned facilities.

4. The private sector is relatively free to repackage and disseminate government-generated information.

5. It is not in the public interest to vest control of dissemination of government-generated information in the hands of individual entrepreneurs who might raise prices to prospective users.

6. Individual agencies set policies in accordance with their missions and goals. The lack of a government-wide policy cannot be charged to them.

7. "Free" dissemination of government-generated information and data has been sharply

curtailed as a result of Office of Management and Budget directives. For example, OMB Circular A-25 sets forth the general policy that a reasonable charge should be assessed against each identifiable recipient for a measurable unit, or amount of government service, or property from which he derives a special benefit.

The Professional Society's View

1. Government assistance to disseminate information is needed as the costs of dissemination rise faster than society members can pay for the publications.

2. There is no way to obtain funds necessary to "mechanize" their information dissemination programs except from government agencies. Without mechanization, they cannot cope with the proliferation of information in their fields.

3. They need the help of the Federal agencies in obtaining funds for preliminary studies necessary to improve their information services.

The Information User's View

1. There has been an extraordinary rise in the costs for informational materials. As a result, purchasing has been curtailed.

2. Libraries cannot afford to buy all of the books and magazines that they need. Establishment of networks that will permit the sharing of collections is necessary for the survival of libraries.

The Publisher's View

1. Costs of materials, labor and facilities are rising precipitously; a larger market is needed to bring a reasonable return on investment.

2. Sharing of collections by libraries as an economy measure may be calamitous to publishers.

3. Photocopying by users is destroying sales; the government should do more to protect intellectual property.

4. Capital needed to modernize processes of production is costly; publishing is becoming a marginal industry.

Discussion

It is evident that all segments of the information chain face strong economic and other problems brought about by new information technologies and other forces. The problem for the government is especially difficult. In addition to managing its own information programs, it must determine when and what to subsidize in the non-government sector; the effect of telecommunication policies on information services; how to cope with a non-profitable postal service that provides subsidies to some and higher costs to others; how to obtain a balance between freedom of information on one hand and agency mission efficiency on the other; how to provide information services to the public and at the same time establish policies that will not penalize the commercial information sector; how to work out a harmonious relationship with all groups in the public and private sector that will result in a minimum of overlap and duplication; and how to formulate policies that will result in electronic networks interconnecting all sectors that will be able to interchange information

and data while simultaneously protecting privacy rights. The solutions needed to solve the myriad and complex problems will be difficult to achieve in light of the continuing introduction of new information technology into the process. Only the government is in the position to formulate policies that can contribute to reasonable accomodation to the realities.

ISSUE 6 Determine The Appropriateness Of Restrictions On The Use And Transfer Of Personal Information In The Private Sector

Background

The Congress has before it an omnibus privacy bill for private sector record systems. 6/ The bill mirrors all of the major provisions in Section 3 of the Privacy Act. Some industry observers feel that it is representative of the kind of privacy legislation that the Congress is eventually likely to pass.

The Privacy Protection Study Commission is preparing a two year study of private sector information practices, including consideration of medical and insurance records; employment and personnel records; credit, banking, and financial records; commercial reporting activities; mailing list brokerage firms; travel, hotel and entertainment reservation information; private sector use of the Social Security number; and State information laws. Its recommendations are likely to be given careful consideration by Congress.

The Department of Commerce is completing plans to survey 3,500 businesses concerning personal information policies and practices.

Private sector groups are also conducting studies. The Bank of America has a major project on disclosure and information practices. The Krannert School of Business at Purdue University has established a Center for the Study of Privacy Issues in cooperation with TRW Credit Data, the J.C. Penney Company, IBM and several other large corporations. The National Chamber of Commerce has announced plans to conduct its own privacy study.

In the meantime, numerous bills have been submitted in state legislatures and the Congress to regulate the private sector. At present more than 35 States have privacy legislation pending; nineteen include provisions for private sector regulation. Some cover only automated systems; most specify kinds of information that can be collected, the conditions of collection, and permissible transfers and dissemination; almost all have notice requirements comparable to the provisions in the Privacy Act; all provide for subject access to records about himself.

Discussion

Information collection as an adjunct to business activity is immense. A partial list which focuses on personal information about individuals would include financial records held by banks and other financial institutions; information on travel, entertainment, and spending patterns held by credit card companies; employment records, including information concerning

absenteeism, and evaluations by supervisors; health and insurance records; educational records of various kinds including transcripts, letters of recommendation and other forms of student evaluations; records of credit service bureaus including information about promptness of loan payments, denials of credit, and such other items alleged to be of use to the credit grantors; and the direct mail industry tabulations and cross tabulations of almost every category of American imaginable.

Virtually all of this potentially sensitive information is gathered, managed and distributed without any comprehensive scheme of Federal regulation. Only the credit reporting industry is now subject to Federal regulation. Those areas likely to receive attention in the near future are discussed below.

Employer Information Practices

Regardless of its size, mission or charter, organizations must maintain personal information about their employees. As a consequence, information

in employee files normally include full biographic data, sensitive objective reports (absenteeism records, medical history information, aptitude test scores, etc.), and at the same time, highly sensitive subjective and normative materials (supervisors evaluations, third party employment recommendations, etc.). In most instances employees do not know how much information about them their employer has collected. They are usually not able to look at their personnel file to determine the relevancy, accuracy or timeliness of information in their file. There is often no guarantee that information will be used for the same purpose for which it was collected. In many parts of the country, law enforcement agencies, banks, credit reporting agencies, and other outside parties have access to employment records. At present, there are no satisfactory standards to govern the length of time that an employee's records should be maintained after the termination of employment.

Banking and Financial Institutions Information Practices

One of the largest aggregations of personal information in the private sector is maintained by banks and other financial institutions. In 1974, there were 14,448 commercial banks, 480 mutual savings banks, 5,170 savings and loan associations, almost 23,000 Federal and state chartered credit unions and over 3,400 consumer finance companies. 7/ Americans had savings accounts valued at roughly 41.4 billion dollars and showed a consumer debt of 880 billion dollars, most of it owed to these financial institutions. 8/ By 1970, fifty percent of American families used credit cards and has run up a credit card debt in excess of 8 billion dollars. 9/

It is estimated that more than 60 percent of adults maintain checking accounts and a large, but smaller percentage have savings accounts.

In order to administer this system, financial institutions collect extensive and sensitive personal information. Financial institutions generally rely on three sources for their information; (1) information

that the individual discloses in his application form; (2) information that the institution learns from other creditors and consumer reporting agencies; and (3) information developed over time from the organization's own experience with the consumer. These sources produce three conceptually distinct kinds of information. In order to determine eligibility for extensions of credit and, in many instances, for opening special checking and savings accounts, financial institutions and credit card companies first collect varying amounts of personal and financial history information. Depending on the type of account, this data can include salary information, employment history, medical history, arrest and conviction information, and personal residence information. Secondly, financial and credit card organizations collect and maintain extensive account information including the consumer's account balance, amount and frequency of payments and collection experience. Third, in some instances, the files of these organizations may contain information on the consumer's activity and travel itinerary.

There has been agitation by the financial community and consumer groups and within the Congress to substantially change standards for collection, use, and particularly dissemination of credit and financial information. Federal legislation has been proposed to tighten law enforcement access to bank and credit card records and give consumers notice of the impending dissemination.

Consumer Reporting Agencies Information Practices

Perhaps the largest compilers of personal information in the private sector are the commercial or consumer reporting agencies. The Fair Credit Reporting Act (FCRA) 10/ defines a credit report as a written record of an individual's financial history or of his character, life style, or personality compiled by a consumer reporting agency. The Act defines a consumer reporting agency as any person or organization that regularly assembles or evaluates consumer credit information for the purpose of furnishing reports to third parties. Reports compiled by credit grantors, including credit card

companies, relating to a transaction between the credit grantor and the consumer are not covered by the FCRA.

Reporting agencies collect information from the individual himself, from institutional sources (such as educational, military and employment records) and from personal sources (such as neighbors, business associates and social acquaintances). Their reports are typically purchased by banks, retail merchants, employers and insurance companies who most often use the information to make decisions about extensions of credit, employment and insurability. Some of the larger consumer reporting agencies amass files on millions of individuals. Equifax, for example, (formerly known as the Retail Credit Company) in 1972 had 300 offices, more than 7,000 employees, 45 million files on individuals and businesses and produced more than 35 million reports annually. 11/

Among the deficiencies of the present statute are said to be:

- It places no restrictions of any kind on industry collection of information.
- Consumers often have no way of knowing that a report on them has been ordered.
- Record subjects cannot physically inspect their files or obtain a copy of the reports.

- Record subjects are not given any information about sources of information or medical data in their files.
- The dissemination standards are so broad and vague that they permit circulation of the report to virtually anyone the company chooses to give it to.
- The law does not set standards for destruction of dated information.

Insurance Industry Information Practices

Five out of six families are covered by life insurance. Over 85 percent of the nations automobiles are insured. Over 90 percent of the nation's homes have some form of insurance. Roughly 80 percent of the public under 65 has some type of health insurance. 12/

In order for an insurance company to make a decision about insuring an individual or his property against a particular type of potential harm, the company must collect what usually amounts to a substantial amount of sensitive personal information. Depending on the kind of policy, the data is likely to include, in addition to complete biographic data concerning health, driving, employment and

educational history, criminal record, living situation, life style information, sexual affinities, and personality and character information.

The insurance industry has established centralized data exchanges. The most notable is the Medical Information Bureau (MIB) operated by some 700 life insurance companies. MIB has information on 12 million people 13/ supplied by member companies. In addition, much of the information compiled by the health insurance industry is managed by computer service houses. For example, Electronic Data Systems Corporation processes 75 million health insurance claims each year. 14/

Information in insurance files is actively traded among insurance companies, government agencies and employers. Individuals are often denied access to their insurance files, particularly when it contains medical information. Although no Federal or state legislation specifically covering the information practices of insurers has yet been enacted, there is a growing consensus among consumers and insurance industry officials that some

reforms are needed. Some of the issues most likely to be faced by Federal policymakers include: (1) the overbreadth and vagueness of applicant authorization forms that give insurance companies virtually unchecked authority to access the applicants' records; (2) sharing of insurance information with incompatible users including employers and law enforcement agencies; (3) subject access; and (4) standards for the accuracy, security and timeliness of information.

Hospital and Medical Record Information

America's health care system is changing in a basic and rapid way. More people are receiving health care and fewer are paying for it out of personal funds. The growing importance of third party payors, be they private insurance companies, employers, private sector intermediaries for government programs, or the government itself, introduces a new and information hungry participant into the health care environment. A second phenomenon is the spiraling use of computers in the collection, maintenance and dissemination of medical data.

At present there are few specific legislative or judical restrictions on use of information by health care providers. Almost everyone agrees that physicians and other medical professionals should have unfettered discretion to collect whatever information they think is relevant. Similarly, there is wide agreement that society should not restrict exchanges of medical data within health care systems or otherwise establish standards for use, maintenance or disposal of medical data.

However, some believe that society ought to impose standards for dissemination of and access to medical data. There already exists a variety of legislative and judicial standards such as laws requiring physicians to report cases of communicable disease and deaths from unnatural causes. In addition several states have statutes that specifically require doctors and hospitals to release requested information to law enforcement agencies. 15/

Educational Institutions

In 1972, 59,289,000 individuals were enrolled in schools, including institutions of higher education.

For each enrolled student, educational institutions often maintain many dozens of pages of information. Schools, colleges and universities, collect, maintain and disseminate a great volume of extremely sensitive information about students and occasionally about their parents. These student files characteristically contain extensive economic and social background data, evaluations of attitudes, behavior, performance and ability, and health information.

Concern about the sensitivity and scope of student information held by schools and their dissemination practices led Congress in 1974 to enact the Family Educational Rights and Privacy Act (Buckley Amendment). 16/ It provides that any school receiving assistance from the Department of Health, Education and Welfare's Office of Education must provide parents (or students if over 18) the right to inspect all school records concerning their children and the right to challenge misleading or inaccurate entries. Furthermore, subject to a few exceptions, schools are prohibited from disseminating any information

from these files absent parental consent. Prior to enactment of the Buckley Amendment, only 24 States permitted some degree of parental access to school records.

Unresolved Policy Issues

Most observers predict that over the next several years, Federal policymakers will be asked to make definitive judgments about private sector personal information practices. Key issues that are involved in that policymaking process are listed below:

- Should private organizations be permitted to maintain secret personal information systems?
- Should general limitations on private sector collection of personal information be imposed?
- When private sector organizations collect information from individuals, should they be required to tell subjects the purpose of the collection, the expected uses, access rights, if any, and consequences for failure to provide information?
- Should standards for accuracy, timeliness, relevance, and security be imposed on private sector collectors of personal information?

- Should government create a regulatory structure for private sector information practices?
- What weight should be given to cost factors, organizational effectiveness, and organizational prerogative in considering the creation of information standards?

ISSUE 7 Consider the Proper Locus Of Regulation Of Information Within The Framework Of The United States Federal System

Background

An increased attention to the possibility of regulation of private sector use of information about individuals and the blurring of distinctions between communications and computers have raised difficult regulatory issues which can have significant impact on our Federal system.

Seven states have already enacted legislation to provide privacy protection for personal information held by state or local governments. No state has

yet enacted "omnibus" legislation dealing with the private sector as a whole, although several have enacted privacy legislation regulating specific industries. An example of these are state fair credit reporting statutes.

The prospect of continued legislative attention has raised concern in the private sector over the probability of conflicting requirements in different jurisdictions which would significantly increase costs or even impede interstate data flow. Consequently, some information industries are warning of the need for uniformity between Federal and state legislation. One such warning has come from the Association of Data Processing Service Organizations (ADAPSO). 17/ Another has come from insurance representatives, an industry traditionally regulated at the state level which has relied on that tradition to resist Federal incursion in other areas of regulation. 18/ Those representatives have argued that if such regulation is deemed necessary, there should be Federal preemption of state authority. 19/

Countering the arguments for preemption are many state government interests who claim that states have a right and duty to resist encroachment on their power to provide protection for their citizens. Representatives of this point of view contend that the Federal Fair Credit Reporting Act does not provide sufficient protection and that the preemptive clauses of that Act improperly restrict the States' ability to do so. They would probably agree with Justice Brandeis that state government should "serve as a laboratory; and try novel social and economic experiments." 20/

Discussion

The problem of achieving uniformity among the laws of differing states has a parallel in the problem of harmonizing national law for the orderly development of international markets. On the domestic scene, of course, the traditions, institutions, and legal doctrines by which this can be achieved are more thoroughly understood and highly developed.

Uniformity of Federal and state laws could occur in several ways: by chance; by special interests coordinating legislative activities in the Congress and state legislatures; by the drafting of uniform state laws by prestigious organizations such as the National Commission on Uniform State Laws; or through Federal preemption.

Preemption rests on the Supremacy clause of the Constitution and presents major issues for our system of Federalism. Consequently, the preemption power has been the subject of much legal attention. In Pennsylvania v. Nelson, 21/ the Supreme Court distilled three tests for preemption where state regulation must yield to Federal: (1) If the scheme of Federal regulation is so pervasive as to make reasonable the inference that Congress left no room for the states to supplement it; (2) If the Federal statutes touch an area in which the Federal interest is so dominant that the Federal system must be presumed to preclude enforcement of state laws on the same subject; (3) If enforcement of the state law presents a serious danger or conflict with the

administration of the Federal program.

In the past, legislatures and courts have not generally focussed on information as a discrete subject. They have instead looked at the medium that communicates the information. Consequently, several bodies of law have developed concentrating on such systems as wireless communications, cable communications, and telephone communications. For example, many of the relevant preemption precedents center on the role of the Federal Communications Commission and the Communications Act of 1934.

In several instances, however, the legislatures and courts have broadly addressed information as a distinct subject matter. The patent and copyright laws are the best examples of this. Here, Federal law exclusively occupies the field of patents and principally occupies the field of copyright. In a 1973 decision, the Supreme Court ruled that the Copyright Clause of the Constitution does not expressly or by inference vest all power to grant copyright protection in the Federal government. 22/ A state may grant

copyright protection as long as it does not clash with Federal law or prejudice the interest of other states.

State information laws are probably vulnerable to the doctrine of "subsequent Federal jurisdiction" in the event that Congress enacts a comprehensive regulatory scheme. Before such a step is taken, it will be necessary to give careful attention to all the ramifications of the use of the preemption rules in new information policy areas.

The rapidly changing character of information technology and usages means that new problems are constantly surfacing. For instance, continued merging of computers and telecommunications has necessitated reopening of the FCC's Computer Inquiry. The issues presented by this inquiry may have implications for the locus of regulation of computer/communications in our Federal system since the Federal government does not regulate the computer industry but does regulate interstate communications. As activities which have heretofore not been the subject of Federal regulation become increasingly intertwined with those that have,

the power of state governments could be eroded with respect to the former.

Whether the activities in question are of a nature to warrant a comprehensive national scheme or whether divided or concurrent responsibility would be appropriate can only be determined after a thorough airing of all the factors involved. This means adequate policy analysis which should be initiated by the Federal government.

ISSUE CLUSTER III

THE INTERACTION BETWEEN TECHNOLOGY AND GOVERNMENT

The issues in this cluster are examples of the way in which technological developments and government regulation interact. This interaction occurs with regard to decisions which affect the national information infra-structure, and decisions on Federal procurement and information related research and development policy. Government action can enhance or restrict competition, establish or erode monopoly, encourage or discourage new technological developments, and accelerate or prevent obsolescence.

In the exercise of its responsibilities, the government impacts on technological development in the following ways:

- As a regulator of information exchange process;
- As a consumer or user of information technology;
- As a funder of information technology research and development;

- As a policymaker in the broad sense of exercising responsibilities for long-range social and economic planning.

Currently, responsibility in these areas is scattered throughout the government. The Office of Telecommunications Policy is clearly the lead Executive Branch agency for questions that pertain to the communications infra-structure, although its influence is limited by the independence of the Federal Communications Commission and the Postal Service. The Office of Management and Budget is responsible for overall policy control for government data processing. But, the Brooks Act locates administration of data processing procurement within the General Services Administration (GAO) 1/ and the National Bureau of Standards sets standards for procurement of such equipment. The lack of coordination of data processing activities has been criticized by GAO and by private interests. There has been no centralized authority for research and development in information science and information systems, although considerable expertise exists in the Division of Science Information at the National Science Foundation, the Institute for Computer Sciences

and Technology at the National Bureau of Standards, and at the Office of Telecommunications Policy.

Issues set forth in this cluster are among the most important facing the country. The policies adopted could have far-reaching impacts on all the other issues discussed in this report. Congress is considering major legislation on the structure of the telephone industry. It has again begun to look at the future of the Postal Service. It is showing renewed interest in computer policy. The ability of the Executive Branch to play a meaningful role in these accelerating processes is dependent upon giving them immediate and high level attention.

ISSUE 8 Establish A Rational Policy Framework For Balancing Issues Of Competition And Monopoly In Shaping The National Information Infra-structure

Background

The interaction between government policy and developing information technology has a profound impact on the national information infra-structure. This infra-structure provides the means by which information and data are transmitted. It includes modes which are sometimes not seen as part of similar and related systems, such as the postal service and satellite communications systems. While many of the new questions of information technology go to the regulation of the information itself, the shape and nature of the infra-structure remains a vexing problem and one which continues to arise in new guises. The focus of this issue is the information infra-structure and its ability to perform the social communications functions for the entire nation.

Major choices face policymakers regarding the

future course of regulation of telecommunications and the relationship of that regulation to new forms of information processing. The confrontation between traditional monopoly policies and new competitive regulatory policies has created problems in the form of conflicts between carrier and user, carrier and supplier, carrier and carrier, and regulated and unregulated service firm. The potential of electronic mail is an example of how new technologies in telecommunications raise significant regulatory questions in areas heretofore unrelated to telecommunications, in this instance, with respect to the United States Postal Service.

Discussion

The central issue facing government policymakers is the need to develop a rational framework of law and regulatory policy which would resolve the

conflicts and integrate competition and monopoly in such a manner as to assure the provision of needed services at reasonable rates and in a manner which will promote efficiencies and further technological innovation.

In the United States, the traditional telecommunications industries consist of private sector monopolies which are regulated by the Federal Communications Commission (FCC) in foreign and interstate carrier operations and by State public utility commissions in intrastate carrier operations. The Federal government's role in regulating these private firms is governed by the 1934 Communication Act 2/ which established the FCC and gave it responsibility for formulation of broad policies in conformity with the Act, the authorization of new facilities, and the approval of services and rates on tarriffs. The Act recognized that telecommunications products

and services should be provided by a limited number of regulated suppliers to assure a homogenous and relatively standardized nationwide network of services. The Act defined common carriers as private organizations each of which was to have a monopoly in a designated geographic area for the product or service it provided.

Several developments in the mid-1960's gave impetus to major changes in government regulatory policy in the communications field. Advanced communications technology led to a growing number of applications to the FCC by specialized communications service firms who sought to provide unique alternative communications systems which could not be provided by the established carriers and which fell outside the regular services provided by the established carriers and covered by monopoly regulation.

Rejecting arguments as to the applicability of regulatory principles of monopoly to these new forms of information processing and transmission, the FCC and courts, in a series of decisions over the past decade, 3/ have introduced policies of competition and open entry in the provision of specialized communications services.

Users may now obtain communications equipment from a source other than the carrier and have it connected directly to the carrier's communications lines. New terrestial (microwave) and satellite carriers are now permitted to provide specialized data transmission services not previously available from established carriers. Firms are now permitted to lease basic transmission capacity from traditional carriers and to use it to meet the special needs of their own customers. Unaffiliated users have been given certain rights allowing them to share private line services so they can be eligible for special rates and take advantage of networking efficiencies. And established carriers have been

allowed to compete in this new specialized communications service market.

Closely related to the question of regulatory policies for specialized communications services is the question of regulatory policies where regulated common carrier communications activities mesh with unregulated computer based data processing. The 1960's saw common carriers diversify and market data processing services. At the same time, computer firms involved in providing commercial time-sharing and data base information services began to offer store-and-forward message switching services previously offered by common carriers. Whether and what form of FCC regulation is appropriate to cover the new systems combining telecommunications and computer technology, is a very complex issue. The FCC has recently reopened its Computer Inquiry to review questions as to the nature and extent of regulation which could and should be applied along the continuum from pure data processing to pure communications.

In this regard the suitability of antitrust policy warrants consideration. Antitrust has been applied to attempts to monopolize data bases and information products. However, several questions exist with respect to its general applicability to the information area. One is whether current doctrines can be successfully expanded to cover the myriad problems of access and exclusivity in information systems. Another is the difficulty of determining relevant information markets. Questions of antitrust applicability arise out of the differences between information and tangible goods. The problem of determining what constitutes a natural monopoly, thus being more readily suited to direct control, is made more difficult by the blurring of distinctions between data processing and telecommunications. Finally, a paper prepared for the United States Committee on Scientific and Technical Information (COSATI) on the application of antitrust to information technology notes problems which arise because of the way social values permeate information questions. It speculates on the need for legislation to provide ultimate answers, "...antitrust decisional process being incapable, as presently constituted, of balancing social values with competitive values." 4/

Overall, these difficult questions are part of a more basic policy concern: the direction of telecommunications regulatory policy toward greater or less competition in the expanding field of information technology. While the trend has been toward greater competition and promotion of new entrants, there has been substantial resistance by established common carriers.

Those favoring competitive policies argue that competition promotes innovation, flexibility, and responsiveness to public need far better than does monopoly. They cite the benefits which have resulted from the limited competition which has been allowed: increased data transmission capability, new specialized services, the opening of new communications markets. They argue that established carriers are unable to provide the diversity of services required and that the economic situation does not justify the imposition of monopolistic conditions.

Those opposing the recent competitive trend and favoring the extension of monopoly to new areas of information technology point to the effect competition will have upon the provision of the

basic communications services which are subject to monopoly. They argue that competitive policies will destroy existing patterns of cross subsidies which, it is maintained, hold down rates paid by residential and rural subscribers. The competitors would move into areas where monopoly services are overpriced relative to cost (to subsidize the basic service) and leave the established carriers with a smaller share of the communications market. For example, it is argued that permitting increased competition will mean higher telephone bills for the consumer.

These are issues which underline legislation entitled the "Consumer Communications Reform Act", now under consideration in the Congress. 5/ Resolution of this confrontation could have a tremendous impact not only on established carriers and those competitive entities providing specialized communications services, but on other economic entities with interests in information technology such as the broadcast, facsimile, and computer industries and ultimately on the institutional structure of a major portion of our economy.

Technological change in processing and transmitting information, the merger of functions and modes, and the competitive environment arising as a consequence of regulatory policies point to the development of radically new information services. Trends toward the use of alternative communication techniques will sigificantly alter traditional means of information transfer. Thus, while banking, telephone, and postal entities have in the past operated with distinctive missions and limited competititon between them, the separate and distinct nature of each institution will become increasingly less discrete. Electronic funds transfer (where computer and telecommunications technologies are substituted for traditional commercial and financial transaction modes) and electronic mail (where electronic transfer of hard copy mail is substituted for traditional delivery techniques) are two principal examples.

Nowhere is the change likely to be more dramatic or the regulatory problems more complex than with respect to provision of postal services. Similar issues of regulatory policy (competition

versus monopoly) which have characterized the telecommunications/computer field, are emerging as a critical issues for the United States Postal Service. The economic, organizational, and legal context are, of course, different but the issues remain essentially the same.

The changing environment facing the Postal Service was described by one commentator as follows:

> Continued expansion of long distance telephone traffic, implementation of electronic funds transfer systems, and provision by specialized common carriers of electronic data and image distribution services shall further accelerate the reduction of already declining letter mail volumes. Recent proposals for banking reform, changes in communication regulatory policy, new interpretations of the private express statutes, have combined with major technology developments in telecommunications subsystems and intelligent terminal devices to provide significant impetus toward the development of national electronic data distribution networks which can be economically viable alternatives to the current U.S. Postal Service letter mail system. 6/

Federal policymakers must confront this difficult situation in the light of significant regulatory policy problems as well. The regulatory dilemma arises in two ways. First, as communications common carriers expand their services so that they are able

to transmit what is essentially a new form of mail, they have the potential of providing the kinds of services which are prohibited by the private express statutes, the legal authority giving the Postal Service its monopoly to carry letters. Second, and from a different perspective, as the Postal Service begins to supply mail service through the use of electronic communications, these services will begin to approach the structure of the traditional communications carrier, which under the Communications Act of 1934, is subject to FCC regulation.

The carriage of mail is a monopoly operated by the Federal government under authority granted by the postal express statutes. 7/ The new technology, however, has reopened the entire question of the Postal Service's monopoly and the relationship of the postal service to electronic communications. The dynamic environment in which the Postal Service now finds itself clearly indicates that changes must take place to assure a more efficient and cost effective means of mail transmission.

The regulatory and policy decisions which face the government in determining the future of the postal monopoly are not unlike the decisions which must be made involving competition in the telecommunications specialized services field. For example, the following questions are pertinent to both: whether the traditional monopoly can adequately provide the services demanded; whether the economic situation constitutes a "natural" monopoly environment; whether competition is likely to lead to innovation, flexibility, and responsiveness to consumer requirements; whether the advantages of competition outweigh the harm that may come to the traditional monopoly structures.

Supporters of the postal monopoly say that without monopoly protection the Postal Service would be unable to fulfill its legislative mission of binding the Nation together and providing service to all communities and regions of the country. It is argued that without monopoly the ability of the Postal Service to maintain uniform postal rates, regardless of distance mail is to travel, would be undermined since the private sector could underbid

the government on the more popular routes leaving it with only the more costly, rural business and destroying the cross subsidies which permitted the uniformity of rates.

It is maintained by those who support retention of the Postal Service monopoly that the government is in a better position to serve the public and would do so more effectively than would private industry. They argue that the special postal services (window services, franking privileges for the blind, security protections for the mail, and rural delivery) would not be provided for by the private sector as the return on cost is likely to be too low.

Those who believe that the postal monopoly should be eliminated or modified to permit competition by the telecommunications industry cite the inability of the Postal Service to provide economically efficient postal service despite the advantage of its monopoly and tax exempt status. Even now the Postal Service finds itself losing revenue and customers to the more innovative and potentially more effective and efficient electronic telecommunications industry.

Those who oppose continuation of the monopoly dispute the argument that competition will result in cream skimming leaving the Postal Service with losing postal routes. While there may be some routes of significance that would be lost to the private sector, the anticipated increase in the number of private postal entities and consequent increase in the quality of the postal service due to the innovations which is likely to occur as a consequence of competition, may well expand the postal market. Thus with decreasing cost and expanding markets, more consumers may be better served at a lesser cost and the Postal Service would capture its share of the new market, improving its chances of survival although in a more limited capacity.

It is argued that competition would spur the development of technologies which make service to remote areas more economically feasible. Furthermore, such specialized services as security measures and window services are not likely to be done away with as long as there is a demand for such services.

The second major question in this area is whether the Postal Service, assuming it was authorized to provide mail services through its own electronic communications network, would compete with the telecommunications industry and be subject to regulation by the FCC. This is the reverse of the question of whether the telecommunications industry would be able to compete with the Postal Service in providing electronic mail. Is there, for example, a necessary conflict with and dilution of stated Congressional policies with respect to the missions of the FCC and the Postal Service? Certainly it would appear that the unregulated entry of the Postal Service into the electrical communications marketplace would have significant implications for effective and rational FCC and state regulation of the communications industry.

ISSUE 9 Determining Appropriate Policies And Procedures For Federal Government Procurement And Research And Development Activities Because Of Their Impact On Information Systems

Background

The policies of the Federal government for the procurement of information processing facilities and services and the funding of research and development in the field of information technology have a tremendous impact on the structure of the market, the industry, and the technology itself.

The Federal government is by far the country's largest procurer of commercial telecommunications and computer facilities and services. Government procurement procedures are important because of the amount expended on plants and services and the system design requirements imposed by particular government needs. For example, when the government procures plants and services from a single entity, the recipients may be accorded a significant if not dominant market position by fiat. In addition, it may receive an indirect competitive advantage resulting from its application of advanced technology and sophisticated know-how developed to fulfill government requirements. When government decides to procure and

operate itself a system dedicated to a particular use, in lieu of leasing public facilities, it removes a substantial amount of business from the private sector.

The Federal government also supports billions of dollars of research and development annually. This expenditure results in an enormous, continuous flow of reports and documentation containing the results of research and development efforts. This new information is initially disseminated to targeted audiences and then, later, indexed and abstracted for retrospective use. Because of the magnitude of United States research and development programs, they make a substantial impact on the scientific and technical infra-structure in the public and private sectors. The research and development sector influences practices in the publishing industry, determines the nature of commercial information services offered by the information industry, affects the tempo of computer application in the professional societies, and shapes the development of new information technology.

Discussion

Federal procurement policies were historically developed in the context of sole-source procurement

from monopoly carriers. Given the emergence of new specialized communications/computer services and consequent cost savings, there is a need to review the government's traditional policies. In seeking to obtain the most effective and economic information processing and exchange capability for the lowest price, the question is whether government procurement procedures should consider how government policies affect the market structure by either encouraging competition or preserving existing monopoly positions.

Public Law 89-306, the Brooks Act, is the principle legislative authority governing the procurement of computers and related systems. The Brooks Act was intended to encourage common usage of computer hardware facilities and to achieve economies in the acquisition of same. Recent reports by the General Accounting Office question whether the intent of this bill has been achieved, inasmuch as procurement authority has been achieved, inasmuch as procurement authority by the General Services Administration. Conversely though, critics of the procurement process argue that GSA is already too deeply involved in data processing acquisitions and that further de-centralization represents the best means of achieving improvement. This question is whether the present role of central management in equipment and software acquisition is the

most appropriate one; if not, what changes are desirable.

It should be borne in mind that procurement policies have the potential to affect information interchange, accuracy of data, and the quality of data bases, and can have implications for freedom of information and privacy. Some of these issues are discussed elsewhere in this report.

Just as Federal procurement policies impact upon the information environment so do Federal research and development policies. Rarely, however, is the close correlation between research and development and the resulting information systems fully appreciated. One example is found in the scientific and technical information area. There is a great disparity in the National Science Foundation's annual budget between expenditures for scientific and technical research and expenditures for science information research. In the last ten years the budget for the latter has decreased from a high of $14 million to a low of $4.6 million while the budget for the Foundation as a whole has steadily increased. This imbalance implicitly calls into question the policies that lead to such decisions. No one disputes the need for performing research and development in science and technology but the amount of attention and support being given is viewed by some as disproportionate to the need for ensuring optimum utilization of the fruits of this effort.

The non-scientific area can also benefit from judicious use of government research and development funds and other incentives. Examples of present efforts include the Department of Health, Education and Welfare's sponsorship of several experiments in telemedicine and education involving remote two-way video patient-doctor and teacher-student communications by coaxial cable, microwave and satellite, and National Science Foundation experiments using satellites to provide educational services to rural areas.

What is an appropriate annual expenditure for information research and development? What Federal policies can best assure the most productive utilization of research and development results? What are the respective roles of government and the private sector in the dissemination of information? Should more long range preparatory research be instituted? Are resources sufficient to do more than react to crises?

Does the general public have a greater proprietary interest in technology developed from government research and development funds than that which has been funded entirely from private capital? If so, what are the limits of creation rights that should attached to such technology? Should affirmative disclosure of the technology and know-how be required in order to facilitate early public exploitation?

Does government unduly distort the market for services or the infra-structure of related industries

through new technologies developed from government-sponsored research and development? If so, does it have an obligation as a regulator to mitigate the effects of its research and development activities?

Government may affect societal evolution by funding experimental demonstrations in information and communications technology which probably would not be developed without government support and which have the potential of changing patterns of society with widespread adoption. What standards are useful in determining the adequacy of private sector research and development initiatives and to measure the relative public good to be derived by government intervention?

To what extent should government research and development funding programs be permitted to determine the direction of future technological developments in the information transfer field?

These question, like others raised, require careful study and difficult choices from among legitimate, competing values. Policymakers must consider these questions in the light of their impact on the duties and responsibilities of the government itself, as well as, upon the information industry and society as a whole.

ISSUE CLUSTER IV

INTERNATIONAL IMPLICATIONS OF INFORMATION POLICIES AND DEVELOPMENTS

The growing reality of instant world-wide communications opens a host of new opportunities for economic and social development for all nations. Through such technological advances as satellites and reductions in transmission costs, telecommunications is rapidly becoming independent of distance. Widespread public and private sector applications of networks strongly support the concept that information technology is becoming extensively internationalized and will blur the effectiveness of territorially bounded regulatory authorities.

Indications of the level of network activity by multinationals are demonstrated in banking, airlines, hotels, car rentals, credit, insurance, and computer service bureaus. The scope of government networks involves law enforcement, passport and immigration, taxes and social insurance, and in some European countries, exchange of voting information on foreign residents. Private user networks illustrate the most dramatic exploitation of new linkages among organizations and among

different countries.

Among the major networks is SITA, the high speed flight reservation network, connecting 160 airlines with 6,000 branches in 90 countries. Other important commercial networks include TYMNET, a trans-Atlantic time sharing network available from all cities in the United States and linked with European capitals; CYBERNET, a network built around six processing centers in The Hague, Frankfurt, London, Ljubiljana, Paris, and Stockholm; GEIS, a satellite system allowing European users to process data in the United States; SWITCH, based in 14 countries offering on-line services through 300 terminals connected to 30 major processing centers and SWIFT, the world-wide interbank financial telecommunications service which will have capabilities for 100,000 messages for international payments transactions per day. 1/

It is often suggested that this new communications nerve system accentuates the interdependence of nations. Because of rapid change, new and potential ranges of applications, and related social and economic implications, international organizations are well behind in meeting their responsibilities

to fix standards and develop necessary levels of harmonization for maximum transnational utilization. The result is growing discord expressed by users, carriers, manufacturers, and governments concerned with legal, proprietary, and data protection in international networks.

As spirited and successful as pioneering efforts in international data networking have been, obstacles remain to attaining full use of technological potentials. Dr. Betsy Ancker Johnson, Assistant Secretary of Commerce for Science and Technology has stated, "Before the full utility of computer communications can be realized, especially on a global scale, some non-technological inhibiting factors must be overcome." 2/ Secretary Johnson indicated these inhibiting factors lie in the slowness of institutional response to technological change, the protective measures taken to safeguard data transfers, and the massive financial commitments required.

This range of challenges has been put in a constructive context by R. E. Butler of the International Telecommunications Union:

> The time has come to recognize that it is of national and international interest to agree on certain principles and policies on computer communications so as to facilitate the elaboration of national strategies for shaping the direction of systems and equipment development and their use.... The telecommunications facility for rapid transportation of data, from one country to another, and the rapidity with which information in data banks can be changed, cancelled or transformed, introduce new aspects which will not have been encountered previously in governmental control and functioning. 3/

What is to be the national strategy of the United States? How is it to be formulated? Who will marshall the resources and expertise to devote adequate analysis to the policy questions presented? The failure to adequately address these questions may entail costs both in terms of the competitive position of the United States and in the preservation of uniquely American values, such as a public/private mix in communications and information.

ISSUE 10 Meet the Need For Interaction Among Developed Countries To Strengthen The Economic, Commercial And Social Dimensions of Information Technology

Background

The changed conditions of international telecommunications is reflected in the growth of activities engaged in by border-spanning organizations such as multinational enterprises, cross-cultural affinity groups, and even military commands. 4/ These new relationships will require a restructuring of the international telecommunication policymaking process. It is not only the proliferation of international networks which raises the need for coordinated international action, but also the growing dependence by governments and organizations on such information exchange services.

Discussion

These new conditions affect two separate categories of policies. One is the conduct of transnational organizations and the impact of such

organizations on international affairs. A second is the implications for telecommunication carriers. Policy considerations and forums for treating them have changed in recent years. Now that telecommunications is abundant and diversified, the concerns of the participants go beyond rate and standards issues.

There could be a shift away from nationalistic policy positions, and movement toward cooperative strategies rather than competitive tactics. An overriding consideration in the development of national policies must be to avoid disastrous consequences in international information exchange.

The widely scattered actions by governments of many industrial countries indicate that their policies to realign internal institutions to meet current requirements are only now beginning to take shape. One major example of national information policy design is The Plan for an Information Society - A National Goal Toward the Year 2000, also known as the "Japanese White Paper." 5/ It was prepared by the Computerization Committee of the Japan Computer Usage Development Institute. The concept of the report is based

upon the belief that in advanced countries, de-industrialization is underway, and that the world is shifting to an information society, "a society that brings about a general flourishing state of human intellectual creativity" by fully employing information and knowledge. The report provides a long range plan for developing an information society in Japan but with an intermediate goal to establish "the computer mind" by 1985.

Under the auspices of the Organization for Economic Co-operation and Development (OECD) an international economic alliance of Western countries, a number of policy issues have been defined:

- Evaluating the impact of innovation on the labor force, working conditions and the restructuring of industry;
- Improving competition in the supply of computer and telecommunications goods and services to lower costs of information and make it more readily available to industry and the public;
- Fully using the productive tools of information technology in public sector applications, such as public administration, health care, local government, and environment;
- Establishing common principles underlying national legislation on privacy protection and the right of access to information;
- Avoiding barriers to the transborder flow of data over international information networks;

- Developing closer relationships in policy formulation among the various participants in the information, computer, and communications field;

- Careful monitoring of substitution among the components of the emerging information sector so as to minimize economic and labor disruptions;

- Improving the relations between government and the citizen through increased public participation in decisions through building up of new information channels; and

- Evaluating the role of "information trade" as an important issue for consideration between the developed and the developing countries.

The degree of commitment to new policy refinements and need for mutual reinforcement among OECD member countries depends both on United States initiatives and the strengthening of machinery inside the respective government to address these issues at an international level. Currently, responsibility for these matters within the United States is greatly divided. To deal with this situation, an ad hoc group has been formed under the leadership of the Department of State. But in the absence of clear authority, greater visibility, and support at higher governmental levels, this group has had difficulty in bringing attention to these issues,

convincing other nations of the seriousness of United States interest, or even preventing the trade-off of these concerns. The group is no substitute for the involvement of a more permanent and powerful governmental unit.

Recognition of the internationalization of information technology is critical to incorporating many of its significant new dimensions into the foreign policy process. The many issues inherent in information technology may remain fragmented until the tenets of a United States information policy are understood. Nevertheless, implications for foreign relations are becoming extensive even now. The following issues could be on an agenda for United States attention:

- Assuring a strong competitive position in the world for computer, telecommunication, and other products and services of information technology.
- Supporting telecommunications network development by pressing for urgently needed new international standards and regulations.
- Determining the role the United States should play in promoting a "global information strategy" based on full utilization of information technology.
- Bringing about a closer harmonization

of information policies among governments of industrial countries through programs of international organizations and contact between private organizations in the United States and abroad.

- o Preparing an appropriate response to the challenge of maintaining the open flow of information among nations while taking into account the necessity to protect personal and proprietary data.

- o Advancing economic and social objectives of less developed countries through the expansion of information technology transfer and assistance programs.

ISSUE 11 Establish Necessary Rules And Data Protection Mechanisms To Allow Continued Free Flow Of Information Across National Boundaries.

Background

The decreasing significance of national boundaries to telecommunications and information transfer is raising a number of policy questions as to the potential need to redefine the principles of free flow of information among countries.

National governments generally welcome information received from entities outside their borders but have

historically exercised control over some elements of it. For example, all countries have regulations on obscenity, public morality, sedition, and national security. 6/ These regulations apply to transborder information as well as to internally generated information. In addition, where economic value attaches to information, especially of a scientific or technological nature, there is often considerable pressure for some form of governmental regulation.

While the unrestricted flow of information is asserted in Article 31 of the International Communications Convention (Montreux, November 12, 1965, 18 UST 575), Article 32 states that sovereignty is reserved in the form of the right to stop transmission which may appear dangerous to the security of the State or contrary to their laws of public order or decency. Under Article 33, States can suspend the international telecommunications service for an indefinite time.

In the preamble to this Convention, contracting parties agree "with the object of facilitating relations and cooperation between the peoples by means of efficient telecommunications services," but do so "fully recognizing the sovereign right of each country to

regulate its telecommunications." It remains to be seen how the broad impact of technology will affect traditional views of sovereignty or impose some normative dimensions to guide the national carriers through new international arrangements.

Discussion

Transborder data transmission may receive greater attention by governments because extraterritorial flows involve personal information for processing, storage, or administrative purposes. 7/ There appear to be four main streams of concern:

- National sovereignty is affected where data resides abroad because established domestic regulatory mechanisms cannot reach the data and the absence of bilaterial or multilateral agreements prevents proper maintenance of the data and its return upon demand by the owner organization or government authority.

- Citizens cannot exercise rights with respect to information residing outside the orginating country, even though the country has laws which guarantee the individual rights of access, correction, and control of dissemination of his personal records.

- There may be adverse economic consequences if a significant amount of a country's data is stored abroad. The development of

advanced information technologies could be retarded and result in loss of enterprises supporting information services and employment. In extreme cases, some countries would become "data poor" while others would become "data rich."

- o An unwanted impact on a nation's cultural identification may result if large stores of information are "homogenized" with records of nationals of various countries or where administrative decisions are taken by persons of a different nationality. 8/

For the United States, technological, commercial, and government interests require the unfettered use of terrestrial and satellite communications. It may be premature to judge whether such concerns expressed over foreign flows of personal data will constitute disruption of information movement, but how to attend to these problems is a ripening issue in the view of several countries.

Analysis of these matters is and has been treated largely in a multinational context by the Organization for Economic Co-operation and Development, the Council of Europe, and the European Common Market and reviewed in a report of the United Nations Secretary General. 9/ However, a special set of circumstances exists in terms of the North/South dimensions of Canadian-United States

data flow which illustrate the nature of the four areas of concern.

The Canadian Privacy and Computer Task Force in 1972 surveyed a number of American organizations to secure information data stored on Canadian citizens, what the information was used for, and what rights were accorded the individuals concerned. 10/ As part of its 1976 survey on computer communications, the Canadian Department of Communications is again asking major multinational organizations having offices or headquarters in the United States about their data transfer practices. The questionnaire states, "Canada has not, to-date, taken a specific position with respect to the whole question of privacy and the transmission of data across its borders. It has preferred to obtain a clearer picture of what type of data crosses the international border." 11/ Among the questions posed in the 1972 Task Force study was whether when "fundamental cultural or social, or even economic interests of a State are seriously jeopardized by outflows of data, unilateral action on the part of the affected State may be justified." The study stated, "This could take the form of regulating particular activities that give rise to the outflow

of data or controlling the flow itself by a variety of legislative and regulatory techniques." There has yet to be a government position announced and Canadian officials are participating in discussions involving possible multilateral action through the Organization for Economic Co-operation and Development. 12/

In Europe, the emergence of several data protection measures enacted or currently before parliamentary bodies has raised transborder data flow questions. The Swedish Data Inspection Board, a licensing authority with jurisdiction over all automated personal registers, has asserted that for approval of transfers of data abroad, the receiving country processor or user must be required to meet similar government imposed data protection standards. In at least two instances, transshipment was denied because of an absence of appropriate statutory guarantees. Norway, Denmark and Finland are joining Sweden in a common approach to data protection, setting a Nordic area standard. Austria and Germany would bar export of certain categories of sensitive personal data unless strong reciprocal laws are in force.

Because of the commitment to both the free flow principle and preservation of human rights, the Organization for Economic Co-operation and Development and the Council of Europe are pursuing preparatory work for a harmonization of national approaches which may result in an international convention. Already, the negative side of the issue has been raised in different ways, such as creation of "data havens" or sanctuaries, embargos on certain types of information, reciprocal legal rights 13/, maintenance of duplicate records to those transshiped, registration requirements, and export duties placed on information to monitor outward flows. In a recent statement on this subject, Congressman Barry M. Goldwater, Jr. stated:

> We are rapidly approaching an international data-spasm -- transnational data flows that operate under no restraint or accountability. What concerns me greatly is the information pirate, similar to the oceangoing pirate, who will pillage individuals and nations of their information valuables if they can retreat to a safe haven. 14/

This is an issue which adds a whole new dimension to the information policy issues discussed elsewhere in this report.

ISSUE 12 Respond To The Recognition By Less Developed Countries Of The Importance Of Information Sector Economic And Social Development

Background

It is becoming widely accepted that improving the utilization of information by less developed countries will accelerate economic and social development. For several years, agencies of the United Nations system have promoted applications of computer science and technology through technical assistance and projects involving procurement of computers for varied governmental programs. The foreign assistance programs of the United States and other industrial countries have similarly supported the introduction of computers and telecommunications systems to assist in census-taking, financial management, tax administration, statistical services, education, and other governmental responsibilities.

A recent report of the United Nations Economic and Social Council stated that:

> In spite of the great potential in the application of computer science and technology, and although significant advances have been made towards its more effective use, the full potential of this technology as an aid in the development of developing countries has yet to be realized. 15/

A number of priority areas have been designated for special attention, including education and training of computer personnel, improved procurement of computer-related products and services, encouragement of transfer of software information, establishment of special financial arrangements for purchasing computer products and services, building systems to transfer technological information, and assistance in computer/communications applications. Many less developed countries have taken steps to coordinate all information processing activities according to a master plan, so as to introduce more coherent planning and decisionmaking capabilities.

Discussion

The movement towards national information policies reflects decisions by countries to exercise greater determination on how their economic development

will be organized and implemented. The three main characteristics of the approaches being taken are:

- Preparation of a national strategy under the direction of a head of state, cabinet advisors, and experts in information technology to unify all major aspects of information collection, processing and application;
- Creation of a central authority with policy responsibilities over procurement, education of personnel, application areas and planning; and
- Organization of information technology support requirements in terms of computer equipment and expansion of telecommunications services.

The consolidation of information technology and its applications under such master plans is termed "informatics" by developing countries.

The growing commitment of less developed countries to policies designed to guide and control the development of information technology and adapt it to a wider range of purposes indicates a desire for long term coordination by abandoning ad hoc projects involving information processing. This may represent a common core of interests upon which a stronger basis of cooperation by the United States and less developed countries could evolve.

The Secretary of State at the recent UNCTAD IV meeting in Nairobi underscored our concern to expand the application of technology for development. In his statement, the Secretary presented some of the obstacles to rapid and effective technology transfer from industrialized to developing countries, mentioning the:

- o Unsuitability of advanced technology to the needs of developing countries,
- o Deficiencies of adequate information and expertise which best meets their needs,
- o Shortages of trained manpower to select, adapt and effectively manage technology, and
- o High capital investments required. 16/

Overcoming these impediments is the very goal of the national informatics policies of the developing countries.

The objective of transfer of information technology has been raised under the program of a new international economic order: "that developed countries should facilitate access of developing countries, on a preferential basis, to 'informatique' suited to their specific needs." 17/ New frameworks

of national coordination for information technology offer potentials for technical and managerial advice and assistance by the developed countries, including the United States. Furthermore, the United States response to its own national information policy issues may reinforce the commitment of less developed countries to better design and direct their information resources. It may also affect the shape which interdependence in the information sector will take.

ISSUE CLUSTER V

PREPARING FOR THE INFORMATION AGE

While many of the issues of the Information Age demand immediate resolution, others require a more long range and sustained approach. Despite the fact that they are less immediate, these issues are not less significant and should be addressed as part of the Nation's long-range policy planning.

The issues in this cluster present some of the broad implications of information technology. They are both an opportunity and a challenge to the Nation.

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ISSUE 13 Consider The Economic Implications Of The Growth Of The Information Sector

Background

Economic policy has become accepted as one of the principal responsibilities of the Federal government. Under these circumstances, attention to the changes that are occuring as the result of the advancing Information Age has become increasingly important.

Whether one is willing to go as far as one distinguished commentator to hypothesize that the economic difficulties of the mid-1970's were symptoms of this social transition, 1/ the available statistics are sufficiently compelling to argue for attention to and understanding of these trends. Concepts of productivity, natural resource constraints, inflation and international interdependence may need re-examination. Widespread information networks, particularly as they begin to take on the characteristics of utilities, could have significant economic effects. These are areas of policy analysis in which government should become involved.

Discussion

It has become commonplace to assert that the United States is becoming an information society. Yet the changes in social and economic patterns that this entails are not always apparent. This is particularly true when information, the invisible resource, is involved. The products of the industrial age were skyscrapers and bridges, and were readily apparent to all observers. The products of the post-industrial age are intangibles, symbolized by data bits in computers.

Nevertheless, since the outbreak of the Civil War, the United States has evolved from a predominantly agricultural society. Between the turn of the century and the end of World War II, the United States became a predominantly industrial society. Beginning in the 1950's the information sector became predominant.

These developments are shown by Figure III (p. 156) 2/ which reflects the nature of the work of Americans. Industrial production replaced agriculture as the largest employer of the work force, only to be replaced in turn by the information sector. In addition to

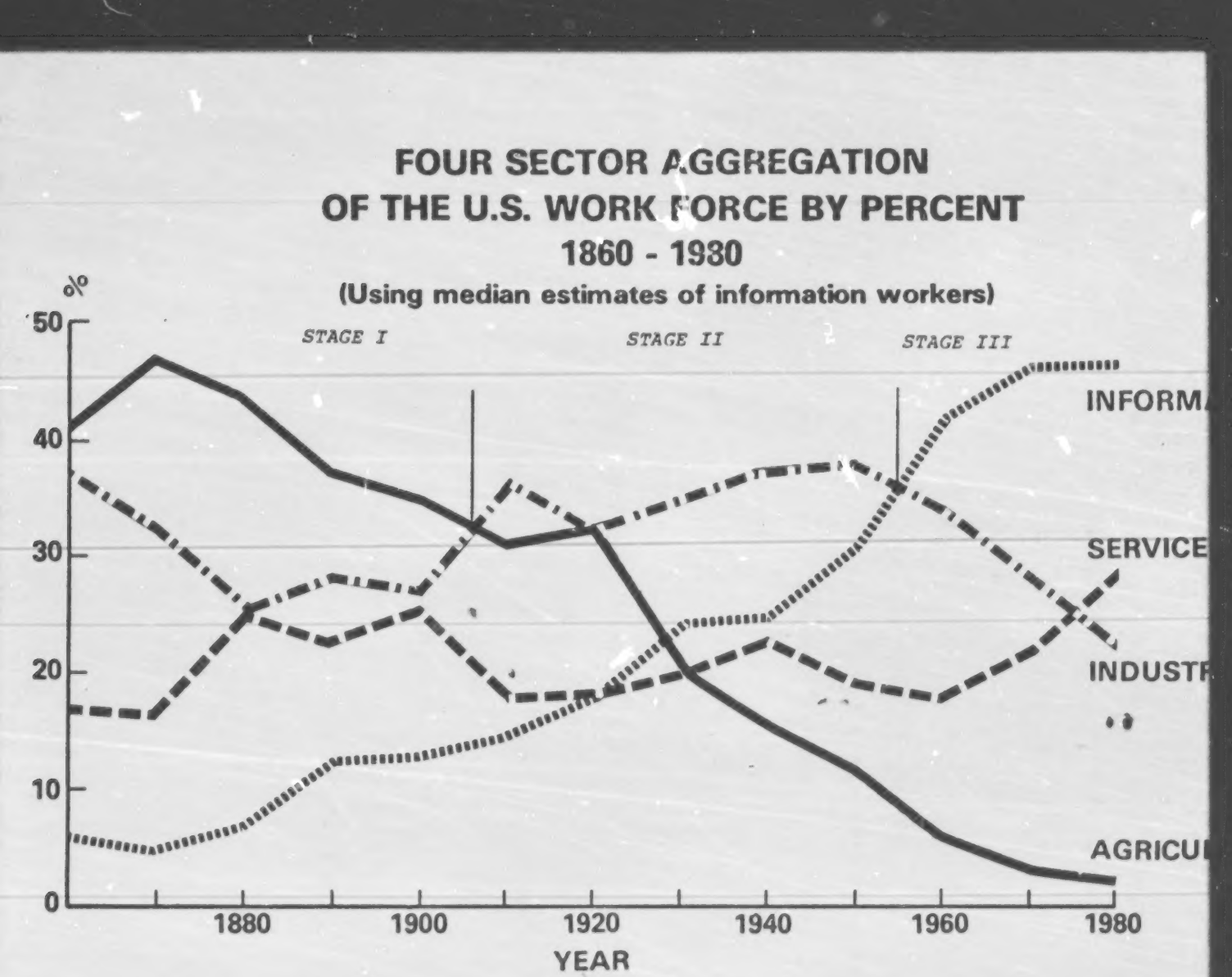
FOUR SECTOR AGGREGATION
OF THE U.S. WORK FORCE BY PERCENT
1860 - 1930
(Using median estimates of information workers)
%
50
40
30
20
10
0
STAGE I
STAGE II
STAGE III
INFORM
SERVICE
INDUSTR
AGRICU
1880
1900
1920
1940
1960
1980
YEAR

FIGURE III

FOUR SECTOR AGGREGATION OF THE U.S. WORK FORCE BY PERCENT 1860 - 1930

(Using median estimates of information workers)

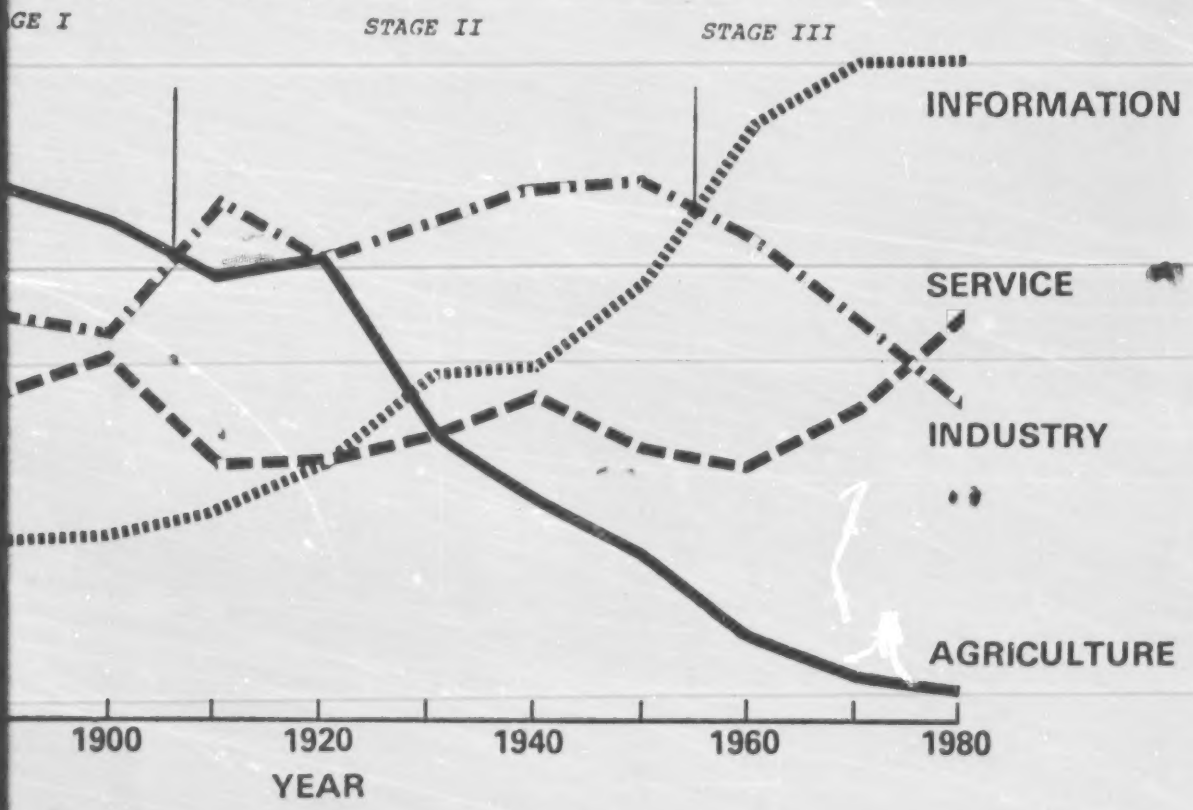

FIGURE III

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providing an ever larger portion of the work force, the information sector is supplying an even greater proportion of national income. Figure IV (p. 158) 3/ demonstrates in a time series the portion of national income from 1930 through 1974 that was derived from the primary and secondary information sectors.

Primary information industries are those that sell information goods and services to other firms, individual consumers, governments, or in international trade. These activities are measurable in the marketplace as sales. Secondary information activities take place within individual firms or governments and are consumed there. Consequently, these information transactions are not measurable directly as sales. Nonetheless, internal information activities play an important role in providing jobs and assuring the success of economic activity. Examples of secondary information activity include personnel, accounts receivable and payable, research and development, litigation, paperwork, planning, marketing, and other information uses that the firm or agency generates and consumes itself.

Earlier transitions from one economic era to another have demonstrated that new forms of

TIME SERIES OF NATIONAL INCOME ORIGINATING IN THE INFORMATION SECTO

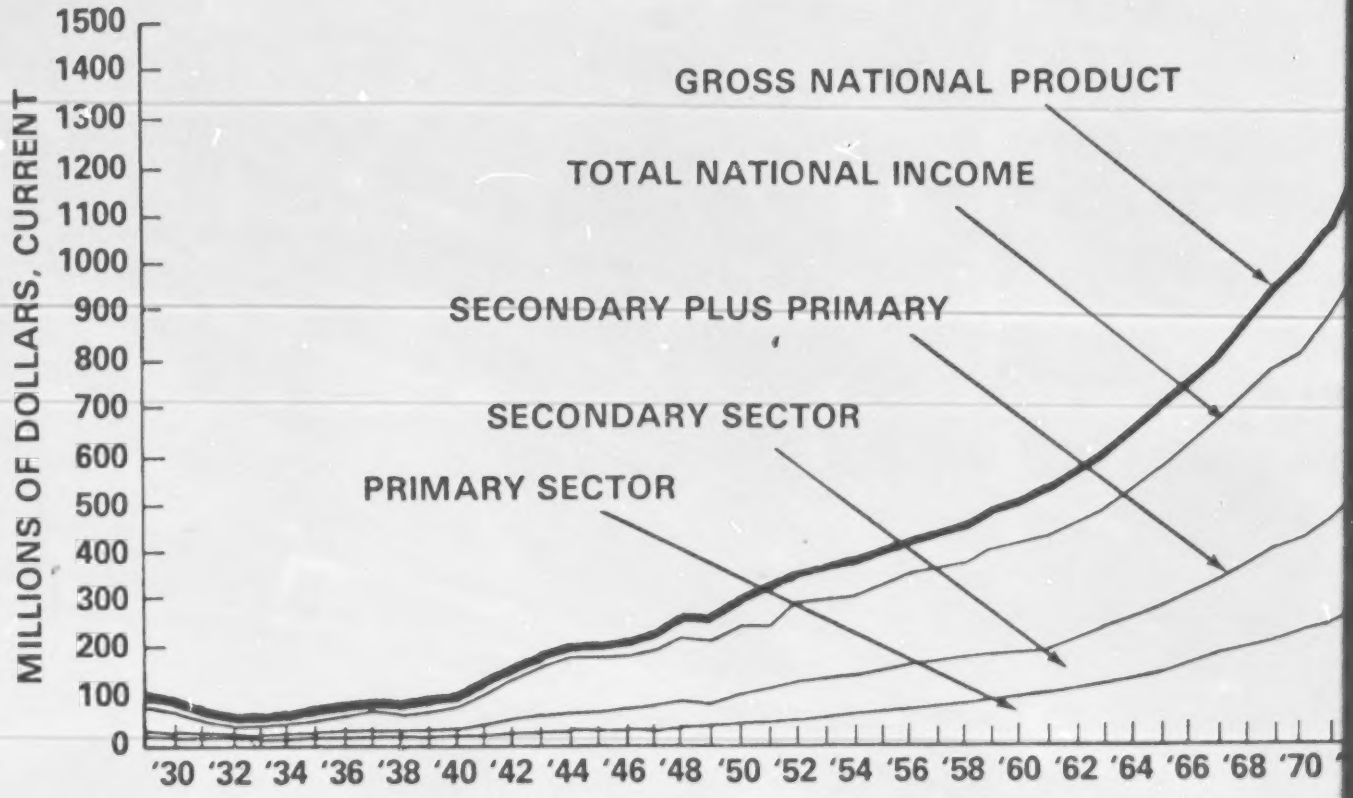

FIGURE IV

IME SERIES OF NATIONAL INCOME
NATING IN THE INFORMATION SECTORS

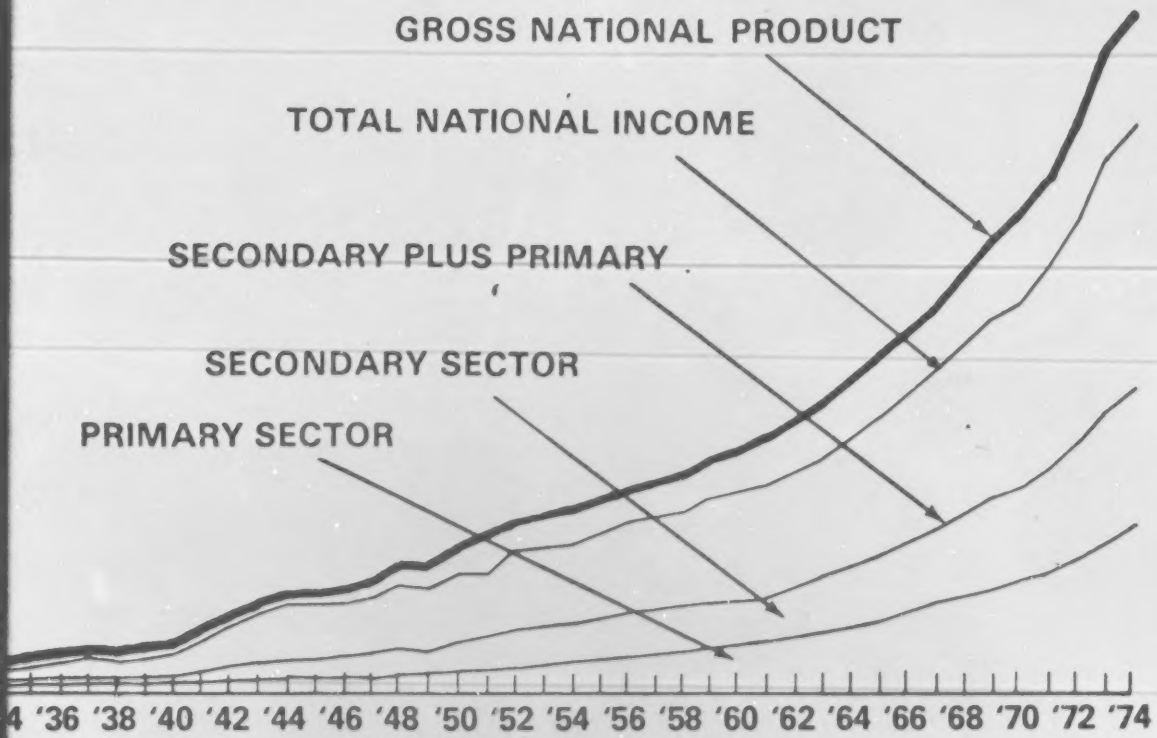
GROSS NATIONAL PRODUCT
TOTAL NATIONAL INCOME
SECONDARY PLUS PRIMARY
SECONDARY SECTOR
PRIMARY SECTOR
4 '36 '38 '40 '42 '44 '46 '48 '50 '52 '54 '56 '58 '60 '62 '64 '66 '68 '70 '72 '74

FIGURE IV

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economic activity become superimposed over previous economic systems. Thus, the coming Information Age will not be a substitute for agriculture or industry; rather, it reflects the addition of a new layer of economic activity which joins and changes the other, earlier activities.

Efforts are now underway to refine characterizations and measurements of the impact of information in total economic activity. Steps in this direction are already being taken through studies in the Department of Commerce, the Office of Telecommunications Policy, the National Science Foundation, and elsewhere in the government and private sector. These projects could result in more sophisticated tools for policy analysis. This work should be encouraged.

The economic implications of the continued expansion of the information sector have caused some speculation about their relationship to national growth policies. At least since the dramatic publication of The Limits To Growth 4/ by the Club of Rome in 1972, economists and others have been involved in strenuous debate over the desirability of economic growth. This heated debate, in which

Americans have actively engaged in recent years, has caught the attention of some of the nation's most prestigious intellectuals. Herman Kahn, for instance, has become a leader in resisting doomsday prophecies and some of the more dire predictions of others have been tempered as a result of his recent analyses.

But wherever one stands on the issues of the consequences of future economic growth, one interesting possibility presented by the Information Age is the prospect of some relief from the limits imposed by finite resources. A shift in the composition of output in the direction of services, particularly services that require comparatively little energy, could provide such relief for the United States and the rest of the industrial world. In the post-industrial United States these processes are already at work in the development of the information-based social and economic system.

> There are two aspects of this potentially unlimited growth. One is that some present consumption and much new consumption could be diverted into information-intensive

> rather than energy-intensive goods and services. The other is that continued application of information (for example, research and development) could lead to more efficient use of available energy and materials, permitting real growth of output given stable inputs. 5/

At the same time, post-industrial policymakers should consider the inflationary and deflationary potential of information sector economic activity. Other labor intensive sectors of the economy have proved to be among the leaders in the generation of inflation. Unlike these inflationary segments of the economy, however, the information sector consumes little energy or other resources.

Economic considerations stemming from increased energy cost can have another form of interaction with developments in information technology. Experiments are underway to determine the extent to which the capabilities of communication and information transfer can be used to reduce energy consumption, relieve population density, and free business from the constraints of space.

Essentially, the information sector is composed of services. Traditional measures of productivity do not reflect the quality of the service rendered. For example, market prices of services vary in such a fashion as not to relate clearly to productivity. Social costs of alternative means of achieving comparable goals are not included in productivity measures. Particularly in terms of evaluating the inflationary and deflationary elements of the information sector, policymakers must work toward developing new productivity indices for the information sector.

The impact of the Information Age on the nature and quality of work should also be considered. Technological obsolescence usually refers to machinery, but there is a form of technological obsolescence that affects individuals as well. It is very possible for a person trained only a few years ago to have that training by-passed by change that takes place so rapidly that the person has no opportunity to maintain an adequate level of skills while performing daily at the job. It is possible, then, that "individuals often become, over time, uneducated and therefore incompetent at a level

at which they once performed quite adequately." 6/ As this phenomenon becomes more common, substantial social tension can be expected.

Finally, some are beginning to warn that the experience of the knowledge worker in the future may repeat many of the problems currently faced by automated workers in industrial plants. In the words of one observer:

> ...the work environment of the knowledge worker - that is the office - whether it be in manufacturing, banking or in government, will more and more resemble a factory in its physical layout, its work through-flow, and that the same subordination of the worker to the process will be evident. 7/

These pessimistic predictions need not prove true. The Information Age offers the possibility of new jobs to replace those which are disappearing. It offers the possibility that work and recreation can become more stimulating and that people can be continually retrained to keep pace with technological and managerial advances. What this will require is a definition of the relationship between man and the new machinery that will be adequate to meet the challenges of a new economic age and governmental policy which can capture the benefits of that age.

ISSUE 14 Consider The Implications Of Information Developments On The Institutional Relationships Between Governmental Units

Background

Governmental authority in the United States is divided among a multiplicity of units. At the national level, the Constitution vests governmental powers in three separate and equal branches. Beneath that level, when regional and district groups providing special services are added to the list of more formal jurisdictions, there are upwards of 75,000 units.

In this highly complex system, information technology has become a significant factor in the blurring of distinctions between various governmental units. Old methods of conducting the business of government which were built upon these distinctions may change; whether traditional relationships between these governmental units will continue in their current form remains to be seen.

Much of the controversy which has arisen between Congress and the Executive Branch in recent years has been over access to information. Among the more notable confrontations have been those concerning rights of Members of Congress to use the Freedom of Information Act, the scope of executive-privilege, and legislation which would clarify the procedures by which Congress may assert its right to information held by the Executive Branch - a function of its oversight power. While these issues have received the greatest public attention, the increasing possibility that Congress could tap directly into the information systems of the Executive agencies has largely gone unnoticed by the public. Such a step could truly revolutionize the relationships between the branches of the Federal government.

The sharing of Federal information with state and local governments raises another set

of issues. Many of the governmental units in this nation came into existence many years ago when transportation and communications were considerably less efficient than now. As these services have improved, the potential for increased sharing and more efficient allocation of responsibilities between the Federal government and other governments has increased. The political obstacles to such re-allocations are formidable, but the possibility that they could occur should be taken seriously.

Discussion

Separation of Powers

Among the factors which are changing the picture of Executive/Congressional relations are the following:

- Congress has embarked on a vigorous program to automate its own information processes. The program involves the use of computers, preparation of data bases, and the distribution of consoles to Congressional offices. These developments

are providing Congressmen and their staffs with a sense of familiarity with electronic data processing equipment which has previously been lacking. It is bringing "information literacy" to Capitol Hill.

- Congress is now in the position to accept Executive Branch generated information in machine readable form. This makes possible direct computer linkage between the branches.

- Congress has created its own information generating community in the course of establishing institutions to enhance its ability to "check" the Executive. The new Budget Committee and the Office of Technology Assessment, as well as the older General Accounting Office, provide Congress with a powerful set of tools for policymaking.

- The upgrading of the Congressional Research Service, part of the Library of Congress, is a key element of the Congressional program.

The current procedures by which Congress obtains information from the Executive Branch could be radically altered if the use of these programs and institutions is maximized. Committee hearings serve to heighten public awareness about issues and provide exposure for Members of Congress, but the nuts and bolts of oversight

may be found in the future in the utilization of the new information technology. If this happens, the ability of Congressional Committees and offices to interact with Federal agencies could affect the decisionmaking processes of government, and the oversight functions of the standing committees will take on new meaning.

For years, a sense of mutual accomodation with respect to the sharing of information was lacking in the relationship between Congress and the Executive Branch. The atmosphere has often been combative and only sometimes cooperative. Arrangements governing information sharing have generally been flexible and not clearly defined. The information sharing pattern between the Executive and Legislative Branch has been largely hit or miss in the past. With increases in systematic sharing between these two branches may come the necessity for formal guidelines to preserve the separation of powers.

Relationships Between Federal, State And Local Government

As long ago as April, 1968, an Intergovernmental Task Force on Information Systems in The Dynamics of Information Flow 8/ found that information systems then in use were not geared to provide reliable and easily accessible information. Further, the Task Force study revealed that (1) exchanging information quickly and economically among governments is often difficult; (2) information is often unreliable, and difficult to summarize and evaluate; (3) there is unnecessary duplication of systems dealing with similar kinds of information; (4) unreasonable and conflicting demands for information are sometimes placed upon the lower levels of government; (5) state and local governments are frustrated in attempts to develop coordinated, unified systems; and (6) scarce resources are being wasted unnecessarily. Among the factors impeding the development of an efficient flow of useful information were: (1) lack of strong, central coordination at all levels of government over the development and operation of internal information systems: (2) fragmentation of Federal grant-in-aid programs available to help State and local governments in the development and operation of

information systems; (3) lack of adequate coordination among separate Federal and State programs which impose requirements for socioeconomic data upon lower levels of government; and (4) lack of appropriate consultation by Federal and state agencies with lower levels of government prior to imposing requirements for information.

These same problems continue today, exacerbated by developments in information systems, their technology, and by other factors. For example, sharing of taxpayer information by Federal and state governments has recently been a subject of controversy because of concern over procedures for insuring confidentiality.

There exists great potential for new institutional arrangements for government. According to Daniel Bell, the United States has become a "national society" as a result of the revolution in communications and transportation. He notes that communications technology does not respect the boundaries of States, counties, and townships. He believes that society must create institutional structures to meet the new scales if it is to survive. The implication is that governmental boundaries and the organizational

entities which operate within them are not well equipped to function in this new environment and a reorganization of traditional governmental structures may be required. But despite the fact that different allocation of government responsibility is becoming increasingly possible, the Nation's ability to meet the needs of a "national society" must be viewed as less than hopeful in the face of some of the most strongly entrenched interests in the country. Confrontations in an Information Age will continue to pose serious problems and severely test concepts of federalism and traditional governmental relationships.

ISSUE 15 Evaluate The Political Social And Economic Implications Of Information Networks And Information Utilities

Background

Trends in data processing and telecommunications promise widespread future use of information networks which will provide a great variety of services to homes and businesses. These networks have increasingly been referred to as information utilities. This term not only provides a convenient expression for a broad range of concepts, but it also suggests many of the important public policy issues involved by implying a comparison with current public utilities (electricity, water, telephone)

The questions which are raised by information utilities touch upon every issue raised in this report. The information utility concept represents a point in the future where many of today's issues will meet. Thus, much of the material which follows will appear familiar to those who have read the previous discussion.

Information systems now abound in the public and private sectors in the United States and other parts of the world. Hence, the question is no longer whether or not we should have networks, but how we should establish them to maximize their effectiveness and efficiency in a manner which will insure their use for public good?

Networking can result in major enhancement of information flow and significant decrease in the per unit cost of information. Moreover, the aggregation of information resulting from networking increases the amount of information available to users, and, through the use of computers, increases the integration of that information with other information. Users can thus have easier and faster access to a greater quantity of information than would be possible from separate systems. Furthermore, the quality of information is enhanced since processing and sharing encourages the maintenance and accuracy of the most up-to-date information. Distance is no longer a significant cost factor in a network since it will cost little more to send messages thousands of miles than to send them short distances. Networking also limits the amount of

information collected by eliminating duplication; it provides savings in manpower and overhead.

The major contenders for achieving such utility status are located in both the regulated and the unregulated sectors of the economy. Major corporations which originated in the communications business, on the one hand, and major corporations which originated in the computer business, on the other, are both beginning to take on similar characteristics as the line between computers and communications blurs. The remaining role for smaller entities and for entrepreneurs is unclear. Users of information, including the general public, have a major interest in the outcome of these developments. Their ability to protect consumer interests can have significant impact on the shape of the utilities.

Discussion

There are an enormous number of possibilities which networks and the utility concept present. They also raise an enormous number of complex questions requiring answers that will affect individuals as citizens, consumers, and in other roles.

Among the possibilities seen by forecasters are the following:

- Rapid growth of many personalized information services that can effect present banking and shopping patterns, mobility of individuals and families, education and training, and locus of employment;

- A changed relationship between the individual and government - extensive polling of citizens through home voting systems, library and other services to the home via communications, electronic neighborhood and town meetings, levying of taxes on home communications by governmental units, and the liklihood of more regulations dealing with information availability and use;

- Reduction of some of the many governmental units that now exist by consolidation through use of the new communications and transportation technology;

- Jurisdictional battles between city, state and Federal Governments over authority and control of information networks, data banks, switching and interfacing between networks;

- Legal problems of an infinite variety: freedom of information, disclosure, access to computerized networks, anti-trust and monopoly, protection of intellectual property, licensing, rates, individual versus societal rights and needs, and transborder flows of data;

- Considerable friction between various groups in the private sector and between the private sector and the government with regard to access and dissemination of information in government data bases;

- Increased international ferment in such areas as control of dissemination of information, especially unwanted information being transferred from one country to another; tariffs and taxes on information imports; demands for inclusion in certain technical information systems; and information to further national foreign policy;

- Extension of demand by public service groups, and from groups in the private sector, who desire extention of FOIA to include access to machine-readable government data bases;

- Battles over the extent to which communications public carriers should be permitted to get into the data bank field in competition with entrepreneurs who have entered the field; and

- Difficulties in survival for conventional information services, such as libraries, the technical press, and other print-oriented fields.

Among the questions that are being asked are:

- How many middle men will be involved in the distribution chain from data base to ultimate user?
- How much redundancy in alternative information channels may be needed to prevent excessive monopoly?
- How will reasonable access by groups and individuals to the contents of data banks be assured?
- What pricing mechanism will be employed?
- To what extent can there be competition between regulated and non-regulated networks?
- What policies are needed to encourage compatability of network operations on a Federal, national and international basis?
- What actions are needed to ensure the involvement of users in the development and operation of information networks?
- Should we depend primarily on marketplace mechanisms to determine the need for information systems, or should we employ other measuring techniques, such as socio-economic needs, for certain kinds of information networks?
- How should we relate growth in cable television, with its two-way capability, to telephone, also a two-way technology?
- Can marketplace factors play a useful role in continuing or terminating services?

Overshadowing many of these questions is another: Under what circumstances should the Federal government create government information networks? An obvious answer would be that it would establish them only in those cases where they are needed but do not exist; where private entrepreneurs are not equipped to establish them; and where they are needed to further governmental missions and responsibilities. But determinations of whether these considerations apply to particular cases will be difficult.

There is the related question of making distinctions between the general public and different special publics for the purpose of making decisions about financing information systems. Thus, the public served by the following systems now in service is different in every case: the Postal Service, the Weather Service, the air controllers information service, seismic information services, space information system, earth resources technology satellite system (LANDSTAT), environmental quality information systems, Federal Information Centers (operated by GSA), and sport and fisheries information systems.

For many, all of these concerns are dwarfed by questions about the desirability of information systems that involve data about individuals, particularly in light of their potential for political and bureaucratic misuse. How can checks and balances be placed on governmental authority to prevent abuse of such system?

Information utilities are now being discussed and debated in academic circles and in professional societies. As these utilities move from the status of theory to reality, the questions they present will increasingly have to be faced by government policymakers. The answers reached will have a impact on the Information Age and the place of the individual in society.

Information systems are spreading throughout the public and private sectors of the United States and the world. The question is no longer whether or not we should have networks, but how we should establish them to maximize their effectiveness and efficiency in a manner which will insure their use for public good.

SUMMARY

The issues discussed in this Chapter are presenting immediate, practical problems for government policymakers. In each cluster of issues, the questions raised involve complex and difficult choices between competing values. Except in the case of Cluster V (which is future oriented), the time to prepare for these choices is fast disappearing.

Cluster I - GOVERNMENT INFORMATION: COLLECTION, TRANSFER AND DISSEMINATION - This cluster covers the Freedom of Information Act, the Privacy Act, and numerous other "housekeeping statutes." Far from being settled law, early experience with these statutes indicates that there are unresolved questions, flaws and contradictions, and practical problems of administration. The reports of the Federal Paperwork Commission and the Privacy Protection Study Commission could well trigger proposals which will encourage

a revision of the current statutory scheme. This would raise major policy problems for the Congress and the Executive Branch within a reasonably short time.

Cluster II - INFORMATION IN COMMERCE: A RESOURCE FOR PUBLIC GOOD AND PRIVATE GAIN - This cluster deals with information and its impact in commercial areas. It deals with information as a commodity and as an essential element in the production of goods and services. Among the matters touching on these issues, revision of the copyright law has been before Congress for several years, and could become law before the end of the year. While the current proposals address some Cluster II questions, they do not always do so in the context of coordinated or comprehensive copyright policy. For instance, one government agency is seeking to use revision to gain a copyright for a limited class of government publications in order to obtain relief from contradictory government pricing policies. Other issues are being delegated for further study to the Commission on

New Technological Uses of Copyrighted Works. Some issues which were delegated in this manner may be decided by Congress before that Commission can act. Other Cluster II issues may be before Congress within two years as the Privacy Protection Study Commission makes its recommendations, the White House Conference on Libraries is held, and other groups begin to devise proposals for the complex issues involving government information services, libraries, and private sector information activities.

Cluster III - THE INTERACTION BETWEEN TECHNOLOGY AND GOVERNMENT - The Consumer Communications Reform Act of 1976 could provide the vehicle for a great national debate on the nature and shape of our national information and communications infra-structure and on the advantages of competition and monopoly. Private interests in support and in opposition to the approach which the bill takes have begun to marshall resources for this legislative fight. Analysis of the impact of these proposals on behalf of the public interest

will also be needed. Indeed, some knowledgeable observers have speculated that a major revision of the Communications Act of 1934 may be in the offing. In another area, the Congress has begun to show renewed interest in the Brooks Bill, and some Member of Congress see this as renewed interest in the compatibility of information systems. Congress has also begun the process of taking another look at the problems of the Postal Service.

Cluster IV - INTERNATIONAL IMPLICATIONS OF INFORMATION POLICIES AND DEVELOPMENTS - In this cluster, the near-term questions are not as pressing as in other instances. Nevertheless, decisions concerning the form which U.S. information assistance for less developed countries take will be affected by activities of international organizations, such as the Organization for Economic and Community Development, which are presently making decisions without reference to the posture of our domestic information policies.

Cluster V - PREPARING FOR THE INFORMATION AGE - The issues in this cluster are of a more long-range nature. They involve policy questions that require preparation for the future. While they lack the immediacy of the problems cited in the first four issue clusters, they are the type which test whether government can move beyond a crisis management approach to allocate resources on a more farsighted basis.

CHAPTER III

RECOMMENDATIONS

> "Government alone cannot be equal to the task of guiding a major transformation of society that is essentially a phase in the cultural evolution of the human species. But government is the only institution competent to mediate the critical task of reassessing priorities, of redefining goals, and of devising the means toward the creation of a material and intellectual environment in which all other social institutions can play their respective roles in the transition." 1/
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> Lynton K. Caldwell, 1975

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To debate whether there should be a national information policy is pointless. There will be such a policy. It will be the result of the answers to the many questions raised in Chapter II and the answers to other questions not yet foreseen. It will exist whether or not these answers are arrived at

consciously or unconsciously, by commission or omission, carefully or haphazardly, in a comprehensive or in a piecemeal fashion.

The observations in a recent government report on communications issues apply as well to the broader issues which are the subject here:

> In earlier times, the expansion of new technology was welcomed without too much concern for future impact. There was room to make up rules and develop policies on a case-by-case basis. Policy was often no more than an accumulation of regulatory decisions. But the quickening pace of technological advances in communications has now rendered the ad hoc method of policy formulation not only obsolete but dangerous. The conditions of today require cohesive planning for the future so that crises, such as those experienced in the energy field, can be anticipated and avoided. What is now needed in communications is a broad and enduring policy framework that will insure that the benefits of new technologies are effectively and expeditiously made available to the consuming public. 2/

The issue, therefore, is whether government will attempt to take a considered and coordinated approach in arriving at these answers. A key question is how to structure the policymaking process so that the country can begin to develop a national information policy that is comprehensive, sufficiently sensitive

to new technology, and responsive to the implications of the Information Age. This report recommends that the first step toward structuring that process is the establishment of a policy organization within the Executive Office of the President to provide coordination and articulate a rational framework for a national information policy.

The Need For A Unified Approach

Chapter II sets forth an issue agenda for the Information Age. But if attention to that agenda is to be meaningful, it must be sustained, be supported by adequate resources, and be backed by sufficient authority to allow a coordinated policymaking process to take shape.

Bringing together the threads of a national information policy in one policymaking location meets several needs:

(1) Information policy issues are interrelated so that actions taken in one area may impact others. Decisions directed at one specific

problem may have consequences for other problems. Thus, the rules for dissemination of government-held information (Issue 3) affect the private information industry (Issue 5). Changes in laws affecting copyright (Issue 4) and postal rates (Issue 8), publication of government documents (Issue 5), and legislation such as the Right of Privacy Act (Issues 2 and 6) and the Freedom of Information Act (Issue 3), all affect the usefulness and accessibility of information, though these changes may have been initially prompted by discrete considerations. As Professor Oettinger has said in speaking of information policy, "Everything is related to everything else." 3/ At present no unit of government has the authority to respond to that reality.

(2) Comprehensive attention to information policy issues provides the most efficient use of manpower and skills. A unified approach to these issues will permit the development of strong and sustained policy skills, take maximum advantage of related experiences, minimize duplication, and

enhance the processes of coordination and policy development. In this regard, it is interesting to note that information policy is increasingly seen as a distinct academic discipline. The issues outlined in this report are, with varying degrees of emphasis, the subject of programs in several major universities. Numerous conferences organized by private sector groups in recent years have made information issues the theme of their program, even when the groups came from different places in the information sector. The general perception that these issues should be treated together is bringing about the development of approaches yielding cross-cutting skills which could benefit the Executive Branch.

(3) An organizational structure which has high visibility and adequate authority could prevent information concerns from being compromised and traded away for other concerns at the agency level (below the range of public visibility), which has often been the case in the past. This can probably be accomplished without changes in the statutory authority of existing agencies.

Organizational Alternatives

From time to time, institutional reorganizations have been advanced to provide better focus for some of the principal issues outlined in this report. One which has received considerable attention is the proposal for the creation of a Department of Communications. The limitations suggested by this name, it should be noted, narrow the broad focus for which this report argues. Therefore, for purposes of this discussion, it is assumed that any department would not take a broad policy approach.

One model which is often advanced is that based upon the Department of Transportation (DOT). It is particularly appropriate in the sense that, in addition to serving as the lead agency for the Executive Branch on transportation policy, DOT also co-exists with independent regulatory agencies (the Interstate Commerce

Commission, the Federal Maritime Commission, and the Civil Aeronautics Board). Presumably a Department of Communications would co-exist with the Federal Communications Commission.

While such a Department might be appropriate at some future date, its establishment at this time would be premature. The departmental option entails a commitment beyond the size and scope needed at this time. Indeed, the policy analysis and groundwork which would warrant such a commitment has not yet been completed.

Other proposals have called for an independent agency to undertake the task of policy coordination with respect to information and communications issues. Those who prefer such a course stress the need to insulate those functions from partisan activity. While this is a worthy goal, such independence exacerbates an already prevalant problem in government policy formulation - the absence of accountability. At least to the extent that policy formulation involves establishing positions for the Executive Branch, the authority of the President should not be diluted. A President's

ability to provide leadership and obtain a unified agency approach depends on clear lines of responsibility. It has been demonstrated that adequate checks and balances exist to cope with the possible misuse of authority. This is particularly true, as is the case here, where policy functions and not adjudicatory proceedings are involved.

Office of Information Policy

A national information policy is realizable through creation of an external committee and advisory structure and by a reallocation of resources within the Executive Office of the President. Financial and staff resource requirements to achieve this objective would be modest.

The principal mechanism for meeting the need for a unified approach to develop a national information policy should be the establishment of an Office of Information Policy (OIP) in the Executive Office of the President. This could be accomplished by structuring a new institutional entity within the Executive Office of the President or by refocussing and expanding responsibilities within any of several existing Executive Office of the President entities. The former would involve a larger investment of resources but would give impetus to the broadest focus on the critical issues. The latter would maximize use of existing expertise and experience and avoid increasing the size of the Executive Office.

Subject to the authority and control of the President, such an Office would perform the following types of general functions:

(1) Serve as the President's principal advisor on matters of information policy;

(2) Provide leadership for the Executive Branch through the initiation of programs of public benefit;

(3) Provide a structural framework for the resolution of competing interests and the balancing of competing values in the course of developing policies on behalf of the Executive Branch;

(4) Resolve conflicts between Federal agencies over policies for the Federal government and other sectors;

(5) Establish and refine priorities for dealing with issues of information policy;

(6) Develop technical and policy expertise with regard to information policy issues, contribute

to the growth of a conceptual framework for dealing with these issues, and monitor developments relating to them;

(7) Provide a focal point for both the public and the private sector where proposals and problems can receive consideration;

(8) Develop recommendations for such further organizational changes as might be required over time and, where appropriate, work with the Congress to effect such changes; and,

(9) Provide a central location for the receipt of the reports of temporary study commissions dealing with information policy and, where appropriate, act on behalf of the Executive Branch concerning them.

Placing of the policy machinery in the Executive Office of the President is appropriate given the limitations which exist on the power of the Executive Branch to respond unilaterally to the issues of information policy raised in this Report.

These issues are subject to the Constitutionally shared power between the Legislative and Executive Branches, and to a large extent have been historically divided among and between the two branches of government in a way that makes a fully coordinated approach especially difficult.

The degree to which Congress is already involved is apparent from the existing statutory schemes and potential legislative actions associated with each of the issue clusters. In other ways, the Congress has become uniquely involved in information policy questions. For example, both the Government Printing Office and the Copyright Office (within the Library of Congress) are part of the Legislative Branch and beyond the coordinating power of the Executive. The independence of FCC authority has the effect of isolating decisions from both Congress and the Executive Branch. Thus, cooperative arrangements will be necessary for policy development in almost all of these issue areas.

Before anything more is done, the Executive Branch needs to set its own activities and policy preferences in order. By establishing, at a sufficiently high level of authority, the means by which unified policies can be adequately considered and formulated, the Executive Branch can place itself in a position to provide leadership. This can best be done, given the importance of the issues and their government-wide effects, from within the Executive Office of the President.

Evolution of an Office

While the creation of a new office within the Executive Office of the President is one possible approach, such an office might also evolve out of the existing staff structures. The Office of Information Policy could conceivably be established as part of the Domestic Council or as part of the Office of Management and Budget. Another viable alternative for establishment of the Office could be through the Office of Telecommunications Policy.

When, in 1970, the Office of Telecommunications Policy was established pursuant to Presidential Reorganization Plan No. 1, a number of roles were envisioned for the new Office: to serve as the President's principal advisor on telecommunications policy; to help formulate government policies concerning a wide range of domestic and international telecommunication issues; and, to help develop plans and programs which take full advantage of the Nation's technological capabilities. The Presidential message accompanying the Plan noted that the speed of economic and technological advance in our time meant that new questions concerning communications are constantly arising, questions on which the government must be well informed and well advised.

In addition to its policy responsibilities vis-a-vis important telecommunications issues, OTP also reviews and coordinates Federal telecommunications planning procurement and manages the assignment of all Federal government radio frequencies. Executive Order 11556 of September 4, 1970 delineates all of OTP's functions and is the basic reference used in defining the Office's

present mandate. The Office has a small professional staff but is supported by private contract research assistance and an operational unit within the Department of Commerce.

Much of the rationale and justification for the creation of the Office of Telecommunications Policy is similarly applicable to the constellation of issues outlined in this Report, through the substitution of the broader focus of information for telecommunications. Among other things, the Office of Telecommunications Policy's activities in connection with electronic fund transfers, with FEDNET and other Federal networking proposals, and its close working relationship with the Domestic Council Committee on the Right of Privacy, have all shown the possibilities of such an expanded framework.

The issues which the Office of Telecommunications Policy is currently focussing upon are in many ways an information policy agenda, although not nearly so broad as that outlined in Chapter II above. The activities and

concerns of any Office of Information Policy will, of course, be the result of the establishment of priorities based on public need and public demand. If properly organized, adequately supported, and thoroughly committed, the Office of Telecommunications Policy could undertake the broader agenda recommended by this Report.

Council on Information Policy

As an adjunct to the operations of the Office of Information Policy, it is further recommended that there be established an inter-agency council, chaired by the Director of the Office, and consisting of designated high level officials in each agency. This body could be organized independently of the Domestic Council or as one of its committees.

The Council itself would meet only occasionally and then to serve as a forum in which government-

wide problems could be aired. The Council and its members would serve as a framework for the organization of subcommittees and task forces to deal with specific problem areas. The members of such task forces might include the agency representatives; more frequently they would be drawn from among agency people with specific expertise.

Advisory Committee

An Advisory Committee should be established to assist the Office in the formulation of policy and should provide a medium of two way exchange between it and the private sector, state and local government interests who are concerned with information policy matters and the academic and professional disciplines which are active in these areas. Such a committee could serve the worthwhile purpose of bringing together the often disparate elements of the information community. Through creative use of the power of appointment, the President could establish a committee with wide representation and great potential for fruitful inter-

action. The seeds of cooperation thus planted could result in the more effective marshalling of the considerable resources in the private, state and local sectors in the service of the nation.

Relationship With The Office Of Science And Technology Policy

The Congress has recently enacted legislation which re-establishes the position of Science Advisor to the President. The new Science Advisor (the Director of the Office of Science, Engineering, and Technology Policy) will be situated in the Executive Office of the President and provided with staff and membership on the Domestic Council. While the Science Advisor's mandate extends to the entire panoply of national scientific concerns, one specific area to which his attention is directed by the legislation is scientific information.

The subject of information policy, to the limited extent that is has been considered in prior years, has tended to be addressed in the context of scientific and technical information. This was the case during

the 1960's, when the focal point within the government for the discussion of information policy was the Committee on Scientific and Technical Information (COSATI), located within the predecessor to the office of the Science Advisor. This continues to be the case in the OECD where information policy questions are all structurally under the aegis of the Committee on Scientific and Technical Policy (CSTP). Indeed, because of this history, the problems associated with scientific information have often crowded out other information policy problems, and have caused the narrower concern to receive the greater attention.

The reach of the information policy questions which now confront the government make such questions too broad to be the exclusive concern of the Science Advisor. However, the Science Advisor should be the primary focus of policy with respect to scientific information. This reflects his specialized expertise and concerns. But the exercise of this function should be tempered with the awareness that decisions which are made regarding scientific information can impact upon the broader field of information policy generally.

Consequently, a close working relationship should be established between the Science Advisor and an Office of Information Policy with respect to such matters that might overlap.

Principles Of Information Policy

One of the most difficult tasks confronting public officials who will grapple with the issues outlined in this report is the formulation of principles to guide them in making decisions. The issues discussed in this report present some of the most complicated and difficult choices facing government. An agreed upon set of principles entails overcoming semantic difficulties balancing competing interests, and reconciling contradictory objectives in an area where the intangibility and newness of the subject matter leads itself to imprecision and misunderstanding.

Despite these difficulties, the following principles are offered, if only as a starting point for debate. While they are general and incomparable, they indicate some directions which principles of

information policy could take.

- Encourage access to information and information systems by all segments of society to meet the basic needs of people, to improve the quality of life and to enable the responsibilities of citizenship to be met.

- Safeguard the use of personal information about individuals and protect their right to personal privacy.

- Encourage systems that foster the creation and dissemination of knowledge.

- Maintain adequate control over the power information provides to government either through checks and balances, through diffusion of control, through decentralization, through Federal/state consortiums, or by other means.

- Encourage efficient resource allocation in the development of introduction systems and efficiency in their use through consistency in standards, practices and procedures, and through encouraging quality and accuracy.

- Maintain pluralism in information systems and strengthen the private sector so that, through competition, innovation can be encouraged.

- Adopt rules which will have some permanence and general applicability so that the private sector will be encouraged to invest in new systems and methods.

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